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THE PHILOSOPHICAL REVIEW.

THE PSYCHOLOGICAL DOCTRINE OF FOCUS AND MARGIN.[1]

IF it is true that misery loves company, those persons who feel despondent over the present situation in philosophy may console themselves with the reflection that things are not so bad as they might be. Our friends, the psychologists, are afflicted even as we are. The disagreements of experts as to both the subject-matter and the method of psychology are as fundamental as anything that philosophy can show. A spirit of revolt is abroad in the land, and psychology is once more on trial. The compact which provided that psychology should be admitted to the rank of a natural science, on condition that it surrender its pretension to be the science of the soul and confine itself to the study of consciousness, is no longer considered binding. The suspicion is growing that consciousness is nothing more or less than an attenuated form of the soul that it pretends to displace. Consequently the psychology without a soul to which we have just become accustomed is now attacked on behalf of a psychology without a consciousness, on the ground that this latter standpoint alone can give assurance against entangling alliances between psychology and metaphysics.

From the side of philosophy this situation is interesting, not only to such as may crave the comfort that springs from the spectacle of distress, but also to those who take a more hopeful view of present-day tendencies. The question that is at issue is fundamentally the question of the nature of consciousness, which

[1] Delivered as the presidential address at the meeting of the Western Philosophical Association, University of Chicago, April 9, 1914.

is quite as important to philosophy as to psychology. On the one hand it is maintained that psychology has to do with consciousness and that its distinctive method is the method of introspection. On the other hand it is urged that psychology is not a science unless the existence of consciousness is denied or at least ignored, and that the method of introspection is a delusion and a snare. The two standpoints are not always clearly formulated, nor can we say that every system of psychology is true to type. It is, in fact, the lack of clearness in the fundamental concepts that makes the status of psychology a matter of so much uncertainty.

The situation presents an apparent anomaly. Both parties profess to deal with facts of observation, yet the claim of the introspectionist that he observes facts of consciousness is met by the assertion of his rival that there is no consciousness to be observed. How can this be, unless we assume that introspection presupposes an esoteric principle, like the principle of grace in religion? It seems evident that we have to do here with some deep-seated misconception regarding the facts that are supposed to constitute the subject-matter for observation and description.

A common procedure on the part of introspectionism is to assert the existence of consciousness as something which is indeed indefinable but which admits of observation and description. But this procedure is no longer justified. In the first place, the assertion that consciousness exists is not the statement of a fact but the designation of a problem. What is the nature of the fact that we call consciousness? If the common sense individual, who assents so readily to the proposition that we all know consciousness, be asked to differentiate between consciousness and the objects of consciousness, he is dazed and helpless. And, secondly, the assertion of indefinability involves us in a difficulty. The indefinability of consciousness has sometimes been likened to that of space, but in this latter case we find no such confusion between space and the objects in space. It is clear, however, that if consciousness is not something distinguishable from objects, there is no need to discuss consciousness, and if it is distinguishable, it must be distinguished before

we are entitled to proceed with observation and description. Definition is indispensable, at least to the extent of circumscribing the facts that are to be investigated. Moreover, if consciousness cannot be defined, neither can it be described. What is definition, after all, but a form of description? To assert, in effect, that consciousness is indefinable because it is indescribable, and that for this reason we must be content with description, is both a flagrant disregard of consistency and an unwarranted abuse of our good nature.

This difficulty leads on to another, for doubts, like lies, have a singular propensity to breed more of their kind. If consciousness is something that everybody knows, why should it be necessary to look to the psychologist for a description of it? If the study of consciousness brings to light any new fact, that fact by definition is not a conscious fact at all, and consequently is not the kind of thing that we set out to describe. Consciousness, in short, cannot be analyzed; it cannot be resolved into elements or constituents. It is precisely what it is, and not some product of our afterthought that we are pleased to substitute for it.

Perhaps all this will have the appearance of lengthy and laborious trifling. Moreover, it may seem indecent to make so much of difficulties that are possibly incidental and unimportant, to the neglect of the results that have actually been accomplished. Why should we quibble over the meaning of description and definition? If the observation and description of conscious facts are actually attained, what matters it that the possibility of definition has been denied? A rose by any other name smells just as sweet.

Let us then observe the actual procedure of the introspective psychologist and note how he circumvents our *a priori* difficulties. In practice there seems to be little trouble. The psychologist's justification for the attempt to observe and describe is based, so it seems, on the observed distinction between focal and marginal experience. To analyze and describe the facts of consciousness is to bring the marginal constituents of experience into the white light of attention. Analysis and description are possible just

because experience is so largely a welter of elements that disguise their identity and character. In some way these unrecognized and unidentified elements are constituents of the total experience. To borrow the language of a writer quoted by James: "However deeply we may suppose the attention to be engaged by any thought, any considerable alteration of the surrounding phenomena would still be perceived; the most abstruse demonstration in this room would not prevent a listener, however absorbed, from noticing the sudden extinction of the lights."[1] Or, as James remarks: "It is just like the overtones in music. Different instruments give the 'same note,' namely, various upper harmonics of it which differ from one instrument to another. They are not separately heard by the ear; they blend with the fundamental note and suffuse it, and alter it."[2] Let the attention be directed to these overtones, however, and they at once detach themselves from their surroundings and step forth into the light of day. Even so the ticking of the clock may pass unnoticed in the sense that it is an undiscriminated element in the background of our consciousness; but if the ticking comes to a sudden stop, the feeling of a void in our consciousness proclaims the fact that something has gone out from it.

The observation and description of the facts of consciousness, then, is based directly on the fact that experience, as the psychologist deals with it, possesses a focus and margin. Nature as conceived by the physical sciences presents no such distinction. The facts are what they are, and their character as focal or marginal, as clear or obscure, depends altogether upon their relation to an intelligence. Or we may say that if the facts of experience were always focal and never marginal, it would never occur to us to speak of consciousness as we do at present. As long as we confine ourselves to a given color, shape or temperature, as experienced focally, we are not dealing with consciousness but with objects. An analysis of such facts that does not bring in the marginal is not an analysis of consciousness but an analysis of physical reality. Even if we consider non-physical objects, such as mathematical or economic concepts, we find that our

[1] *Principles of Psychology*, I, p. 241, note.

[2] *Ibid.*, p. 258.

analysis is not psychological as long as the marginal is left out. The consideration of the margin, however, brings us into the presence of facts which are of a distinctive kind and which warrant a new science. Let the margin be eliminated and psychology disappears at the same time.

The psychological doctrine of focus and margin, then, to which I invite your special consideration, is a matter of fundamental importance. On the interpretation of this doctrine depend our systems of psychology and of philosophy. What, then, is meant by focus and margin? If we turn to our psychologies, we seem to be confronted once more with something that everybody knows and nobody can define. But since we have to do with a distinction, the obligation to differentiate can not be wholly ignored. Consciousness is sometimes likened to a visual field and sometimes to the waves of the sea. Like the visual field it has a foregound and a background, a near and a remote, a center and a margin or periphery. The contents of consciousness are vivid or clear in the center of this field and fade away into vagueness or obscureness in proportion to their approach to the periphery. Or, to take the other comparison, the focus may be represented by the crest of a wave and the margin by what we may call its base. This illustration has the advantage that it indicates the difference between higher and lower degrees of concentration. As concentration increases, the crest of the wave rises higher and its width decreases, while the reverse is true where the concentration of attention is less intense. All consciousness possesses the distinction of focus and margin in some degree; however much we may be absorbed in an object or topic, there is always an indirect mental vision that informs us of other facts, which for the time being are in the background of our consciousness.

For purposes of description a metaphor is at best a clumsy device. It has a tendency to substitute itself for the thing to be described and thus to conceal its limitations and inaccuracies. The present case is no exception. I am forced to think that the visual field in particular is a thoroughly vicious metaphor when employed to body forth the distinction of focus and margin.

Whatever this distinction may in the end turn out to be, it is not such as this comparison would lead one to suppose. Objects seen in indirect vision appear obscure and blurred precisely because they are in the focus of consciousness. We get pretty much the same sort of obscureness or blur on a printed page when we look at it in indirect vision as we do when we look at it from a distance that is just too great to make out the words or characters. What the illustration shows is that things look different according as the circumstances under which we see them are different, but what bearing this has on marginal consciousness is not at all obvious to an unsophisticated intelligence.

When we speak of a focus and margin in consciousness, we are presumably dealing with conscious fact. Now this illustration of the visual field does not represent conscious fact. Ordinary perception carries with it no sense of obscureness at all, and when it does we have exactly the same kind of situation as when an object is too distant or in some other way inaccessible to satisfactory perception. That is, the object perceived is in the 'focus' and not in the margin. The obscureness of objects when seen with the margin of the retina has no more to do with the margin of consciousness than the obscureness caused by an attack of dizziness or by a morning fog.

It will be said, perhaps, that consciousness may be unclear even though there be no sense of unclearness, that there is such a thing as intrinsic clearness, quite apart from obstacles and problems. In other words, the same sensation is capable of realizing various degrees of clearness. It is not at all obvious, however, why the different experiences that are concerned in such a comparison should be called the same sensation. As long as we abstract from objective reference, each sensation is just what it is and there is no opportunity to make comparisons on the basis of clearness. A sensation as such—if we are bound to speak of sensations—can by no possibility be an obscure sensation, for the trait that we call obscureness or vagueness constitutes the intrinsic being of that sensation. If we permit ourselves to speak of clearness at all, we should rather say that it possesses a maximum of clearness, since it has managed to

express or present its whole nature with not one trait or feature lacking. What more could be demanded, in the way of clearness, of any conscious fact than that it should body forth every detail that it possesses?

If sensations or states of consciousness possess degrees of clearness, it seems to follow that we may scrutinize them for the purpose of discovering characteristics that were present though scarcely perceived, in much the same way that the polishing of old furniture brings out the grain in the wood. But such a parallel, I submit, is plain nonsense. The supposition that consciousness is something that in due time and with good fortune may attain consciousness is too absurd for discussion, even though it is a supposition that plays a considerable rôle in present-day psychology.

The purpose of the discussion, up to this point, has not been to deny the validity of the distinction between focus and margin, but to insist upon the necessity of reconsidering the meaning of this distinction, if we are to attain to a workable definition of consciousness and a fruitful or even intelligible conception of the problem of psychology. I have endeavored to show, in the first place, that the doctrine of focus and margin involves the *raison d'être* of psychology. Apart from this doctrine we have no task or problem that psychology can claim as its distinctive possession. The analysis of what is in the focus of consciousness is adequately provided for in the other sciences; it is only with the introduction of what is called the margin that an enterprise of a different kind becomes necessary. But, secondly, this distinction of focus and margin cannot be drawn on the basis of the experienced contrast between clearness and obscureness. The very fact that anything is experienced as obscure means that it is an object of attention, or, in other words, that it is in the focus of consciousness and not in the margin. The comparison of focus and margin with direct and indirect vision is misleading, because it suggests that experiences are marginal in proportion as they are felt as obscure. And, thirdly, if we undertake to distinguish between focus and margin on the basis of a difference in clearness or vividness of which no note is taken at the time, we encounter

the difficulty that experience or consciousness, taken abstractly, does not admit of such variations in degree, and so this criterion likewise goes by the board.

The situation is indeed peculiar. That there is a realm of psychological fact is universally conceded. As a consequence of this conviction a great body of fact and of doctrine has been built up. It would be folly to deny either the distinctiveness or the significance of this achievement. And yet James's description of psychology as "a string of raw facts; a little gossip and wrangle about opinions; a little classification and generalization on the mere descriptive level; a strong prejudice that we *have* states of mind and that our brain conditions them," is not wholly untrue even today. It is even possible for a present-day critic to outdo James and maintain that the legitimacy of psychology as a separate inquiry is a matter of faith rather than of sight. The 'raw facts' of which James speaks resolve themselves into physical and physiological material on the one hand and metaphysical dogmas on the other; the gossip and wrangle are largely over fictitious problems; the classifications and generalizations as a rule involve trespassing on other fields; the prejudice that we have states of mind has less standing-ground today than it had twenty years ago. In other words, there is still plausible ground for James's pessimistic comment: "This is no science, it is only the hope of a science." A situation such as this carries with it the insistent suggestion that the trouble lies, not primarily in the nature of the subject-matter, but in our conception of the problem. "The matter of a science," as James says, "is with us." And if the distinction of focus and margin constitutes the starting-point and justification for a science of psychology, a better understanding of this distinction will mean a more adequate appreciation of the problem with which psychology has to deal.

As a starting-point for a reconsideration of focus and margin, we may take those experiences in which the distinction of clearness and obscureness is presented as an experienced fact. Let us then look once more at the familiar illustration of the visual field. "When we look at a printed page, there is always some one portion of it, perhaps a word, which we see more clearly than we do the

rest; and out beyond the margin of the page we are still conscious of objects which we see only in a very imperfect way."[1] That is, we appreciate the distinction between what lies in the center of our visual field and what is more remote, just because in this experiment we are trying to see what lies beyond the center without turning our eyes in that direction. We set ourselves the task of seeing what is on the page, and at the same time we interpose an artificial obstacle. Hence the sense of effort, and the contrast between what is clear and what is obscure. This contrast is created by our attempt to overcome the difficulty, and is therefore absent from ordinary, unobstructed visual perception.

The situation described in the following familiar quotation from James is an illustration of the same thing. "Suppose we try to recall a forgotten name. The state of our consciousness is peculiar. There is a gap therein; but no mere gap. It is a gap that is intensely active. A sort of wraith of the name is in it, beckoning us in a given direction, making us at moments tingle with the sense of our closeness, and then letting us sink back without the longed-for term."[2] 'I met this man on the train, and later at the reception; but what is his name?' The struggle rends our consciousness in twain. The occasions of our meeting, his appearance, his conversation, are solid fact, yet all suffused by the pervasive, evanescent 'wraith' that tantalizes us with glimpses which half reveal and half conceal the name we seek to grasp.

It is in experiences of this sort that the doctrine of focus and margin has its root. They likewise furnish a point of departure for the explanation of experience that we find in James and Bergson. These experiences, so they contend, take on their peculiar coloring from their relationship to a beyond, to something which is yet to be. If we are to understand experience as it really is, we must guard against the besetting temptation to translate everything into spatial equivalents. This forward reference is usually read off as a distinction and contrast between simultaneously existing components. Some constituent is first set apart as the nucleus or focus and is then enveloped with an

[1] Angell, *Psychology*, p. 65.

[2] *Psychology*, I., p. 251.

elusive, intangible wraith of meaning, which is called the margin. We have been taught to think of the focus as occupied by sensory material of some sort and silhouetted against a background lit up by the fitful, inconsequential heat-lightning of meaning. But this is a perversion of the facts. When we are engaged in a problem it is precisely these unformed meanings that are of interest and importance. They are in the focus of consciousness, in so far as we can speak of a focus at all. They absorb our attention and direct our energies. They inform us of a margin, not by refusing to compete for our attention with more important or more interesting facts, but by bodying forth the *unfinished* character of the situation. Hence this beckoning, this tingling with the sense of closeness, this sinking back when our efforts meet with defeat. Focus and margin, in short, have to do with movement, with transition, and not with a static field. These situations are felt as inherently unstable and in process of reconstruction. There is a peculiar sense of activity, of 'something doing,' of a future knocking on the door of the present. What is thus on its way to the present we can designate only in terms of the object as it is after it has arrived. To call it marginal is to immerse the object in this temporal flux, which embodies perfectly the characteristics of Bergsonian duration.

But this is only a first step. If we turn now to those experiences from which this inner diremption of fact and meaning is absent, we find processes that are essentially the same in kind. They likewise constitute a temporal flow, even though there be no sense of duration or of change as such. The different moments of these experiences are not mechanically juxtaposed, but blend together in much the same way as when the process is experienced as a process. In principle we have the same transition, the same becoming, the same growth from less to more, the same activity of continuous reconstruction. Conscious life, we find, is a continuous adjustment; each of its moments is a 'transitive state.' The more evenly flowing experiences are likewise endowed with a focus and margin, not in the form of static elements, but as a dynamic relationship of what is with what is to be.

Such an interpretation of experience, moreover, opens the

way for a proper evaluation of the psychologist's procedure. The concept of sensation is methodology pure and simple. Granted that focus and margin are such as was indicated a moment ago, how are they to be described, unless we resort to some *Hilfsbegriff*, such as sensations? James's description of the effort to recall a forgotten name is not description at all in a scientific sense, since the 'wraith of the name' that we are trying to recover is of too unearthly a fabric to be weighed and measured by accepted scientific standards. It makes us 'tingle,' it lets us 'sink back,' but such portrayal is literature rather than science. Our first step must be to resolve our material into components. These components we identify with genuine elements if we can, with pious fictions if we must; but until this is done there can be no exact description. There can be no precision in our statement of the facts and no formulation of the laws that govern their changes.

This view undeniably has a certain plausibility. As long as the results are attained which the psychologist sets out to reach, we need not be hypersensitive on the score of methods. In the field of natural science, at all events, this Jesuitical principle is not incompatible with respectability. It is true, indeed, that if sensation is but a tool or artifact, we are obliged to indicate the end that is to be attained by this device. What do we gain by translating experience into non-existent sensations? What are these laws which they are to help us formulate, unless they be physiological laws, which can be stated very well without their aid? But waiving these questions for the present, we may consider whether this interpretation of experience has any better warrant than the one that it seeks to displace. The concept of sensation, it may be noted, was originated, not in the interests of methodology, but as the expression of a historic preconception which mistook fiction for fact. The fundamental error back of it was the preposterous notion that consciousness consists of subconscious or unconscious constituents, which by their mechanical or chemical combinations make our experience what it is. The question which it raises and which has afflicted us even to the present day is not primarily the question of fact, but the question

of intelligibility, as the controversy over mindstuff abundantly attests. Whether we regard consciousness as made up of sensory material or as constituted in some other way is a matter of detail; the primary question is whether a distinction between consciousness as it appears and as it 'really' is has any meaning. In so far as this distinction is maintained, we are beating the thin air of mythology, despite our reinterpretations and justifications. True conversion does not consist in a renaming of old gods, but demands a humble and a contrite heart. To call sensation an artifact, a methodological device, without a surrender of the metaphysical assumption that lies back of Associationism is not to correct the evil, but is more likely to be treated as an indulgence for sins that are yet to be committed.

These comments are but a preamble to the charge that this doctrine of Bergson and James is in the end a perpetuation of what is worst in the standpoint of Associationism. It affords another illustration of the meeting of extremes. Both points of view undertake to tell us what is going on behind the scenes, what consciousness or experience 'really' is. The descriptions present an astonishing difference of vocabulary; but if we take care not to be misled by superficial differences, we find an equally astonishing agreement as to content. From the one side consciousness is explained as a juxtaposition of elements; from the other as an interpenetration of elements so complete that the parts can be neither distinguished nor isolated from the whole. On the one hand we find a multiplicity without unity, on the other a unity without multiplicity. In the one account the temporal unit is a sensation devoid of internal temporal diversity; in the other duration as such is a unity in which past, present and future blend into an undistinguishable whole. The one position gathers its facts by a mystifying process called introspection; the other obtains its results from a mystical faculty of intuition. The difference in language remains, but both accounts lead us away into a twilight region where words substitute themselves for facts.

Time does not permit an attempt to verify these assertions in detail. My chief concern at the present moment is the contention

that a contrast between ordinary experience on the one hand, and something else of which it is the appearance on the other, is inadmissible. It is metaphysics, in the bad sense of the word, whether it shows itself in the domain of science or in the domain of philosophy. To describe experience by reference to such a real is to explain what we know in terms of what we do not know. The question as to what is real is absolutely sterile. Our descriptions and explanations must remain on the same plane as the experiences with which they deal and not seek after a real of a different order. To state this in terms of our specific problem, the distinction between focus and margin must not be brought back to hypothetical sensations that are almost but not quite experienced, nor to a duration in which all distinctions are swallowed up, but must be rendered in terms of other facts that dwell in the light of common day.

What are these further facts? If we eschew the metaphysics of Associationism and Bergsonism, we must take our cue, it would seem, from the behavior in which focus and margin play a part. Looking again to those experiences of stress and strain in which the doctrine of focus and margin originated, we find that they are correlated with a type of behavior that is unique. An attitude of expectancy, for example, is as much a physical as a mental attitude. The mental projection into the future is accompanied by a bodily 'set' or preparedness for coming events, even though the nature of these events be a matter of some uncertainty. The nervous system is in readiness to respond this way or that; or rather it has already started to act in various ways. This attitude of attention or preperception may be described provisionally on the side of the body as a set of loosely established temporary reflexes. Certain nervous connections are organized for the occasion, so that when a given stimulus arrives it will induce its appropriate response. This situation is best exemplified, perhaps, in simple reaction-experiments in which the subject makes one of two alternative responses, according to the nature of the stimulus.

This account, it should be noted, starts with a set of miscellaneous responses that are already going on. If the subject is

to respond with the right hand to one stimulus and with the left hand to another, both hands are in readiness before the stimulus appears. The hands are not merely ready to act, they are already acting. Through the agency of the cerebral cortex these partial responses have been so organized as to issue forth in a unified, orderly and progressive response. Thus the immediate act of looking has embodied in it the activity of the response that is to follow later. The looking is not simply with the eye, but with the hands that are to make the movement. It is not just visual response, but a visual response which, in the language of Bergson, prefigures or sketches out the act of a later moment. The excitation induced by the stimulation of the optic nerve is modified by the excitation that comes in from the hands. Before anything can happen, these various excitations must come to terms with one another, so to speak; that is, a stimulus must be organized which will take account of them all. It is precisely because the excitations are present from the start that they demand a stimulus of a different order and that we can speak of the organization as a kind of temporary reflex.

In one important respect, however, these temporary organizations are very different from ordinary reflexes. The various successive acts that make up our temporary reflex achieve their relationship to one other from the fact that they are started simultaneously. Apparently this is not the case with true reflexes. The act of swallowing that starts the complicated process of digestion is merely the first act of a series. There is no evidence that the movements of the stomach and of the digestive fluids must be presupposed before we can permit the act of swallowing to take place. The swallowing may start the other processes, but we can not turn this about and say that these other processes make the first act one of swallowing rather than something else. While the excitation that sets off the first act may be somewhat modified as the result of previous acts, it does not seem necessary to assume that there must be a representation within the first stimulus of the acts that are to follow at later moments.

We have now reached the point where the cat is about to

emerge from the bag. In a reflex act, so it was stated, the stimulus that evokes the first response is like the spark that sets off a fuse. Each stage in the process becomes a stimulus to the next. In our 'temporary reflexes,' on the other hand, a certain organization must take place before the act can proceed. The first response is delayed until the last is provided for. Or we may say that until the organization is effected, it remains to be seen what the first act is to be. In response to an optical stimulation, for example, the eyes may be focused for the act of looking or they may be closed as a protection against danger. There is, to begin with, no adequate stimulus at all. The process of organization is as much a process of securing a stimulus as it is a process of securing response. What is needed is a stimulus that will give direction to all the partial responses and not merely to the first of a series. And yet the responses that enter into the total act come in a serial order. To be adequate, therefore, the stimulus must take account of both the earlier and the later stages of the response by evoking the first stage *as* a preliminary to the second. The stimulus is evidence that a response has been attained, but attained with reference to the response of the next moment. Such a stimulus is evidently unique in kind. It is called into being to suit the needs of the moment, and it controls the progress of the response by reflecting or prefiguring in its present constitution the responses that are yet to follow. And this is precisely what is meant by consciousness or a conscious stimulus.[1]

The same point may be stated by saying that conscious behavior involves an organization in which the body and its stimulus are correlative factors or components. We have grown so accustomed to the notion of a static environment, so far as consciousness is concerned, that the idea of a process which involves objects as well as the adaptive organism seems strained and fanciful. And yet the relativity of sense-perception is one of

[1] Cf. Dewey, "The Reflex Arc Concept in Psychology" *Psychological Review*, 1896, and, "Perception and Organic Action," *Journal of Phil., Psych., & Scientific Methods*, Nov. 21, 1912; also, C. Judson Herrick, "Some Reflections on the Origin and Significance of the Cerebral Cortex," *Journal of Animal Behavior*, Vol. III, pp. 222–236.

the platitudes of philosophy. The objects that we see and hear and touch are but an epitome of our past training and present disposition. That man is the measure of things is nowhere more easily verified than in the world of our sense-experience. The attempts to protect things against the profanation of change through contact with our experiencing of them, even at the cost of reducing consciousness to a pitiful epiphenomenon, constitutes a long history of weary futility. The new movements in philosophy are, first of all, a protest against the jugglery by which objects are made to disappear and appearances to substitute themselves for reality. The object before us, so we are assured with patient repetition, is its own self and not a pretender seeking to impose upon our naïve faith in the deliverances of the senses. In other words, let us accept whole-heartedly this inevitable relativity, in the hope that the threat will be transformed into a deliverance. In our reaction-experiment, for example, the situation before us is as truly objective in its uncertainty and emotional tone as in its spatial relations and colors, in the sense that all belong equally to the object. This relativity, however, is shorn of its terror, since the change that things undergo in becoming experienced is simply the exercise of a function in the control of behavior. Things undergo a change in becoming objects for consciousness, but the change is by virtue of the fact that they assume a certain task or duty. The experiential object varies with the response; the situation and the bodily activity fit together like the sections of a broken bowl.

The situations of expectancy and uncertainty exemplified in the reaction-experiments are of special interest because in them the distinctive character of conscious life is writ large. To say that they are conscious situations is to say that they are so constituted that the possibilities of a subsequent moment are embodied in them as a positive quality. In them the present moment is affected by a future that is contingent. And similarly the response has neither the predetermined organization of the reflex nor the aimless character of a response that issues in a set of random movements. It is, so to speak, of a generalized character, like the paleontological specimens that foreshadow in

their structure the advent of both fish and reptile. This form of organization pertains to all conscious behavior. In uttering a sentence, for example, we know in advance what we are going to say, yet the sentence shapes itself into definite form only as we proceed. The same word in different contexts is a different word in each instance, by virtue of the coloring which it takes on from what is to follow after. And this is equally true of our most casual experiences. The auditory or visual object that we happen to notice and immediately afterwards ignore is apprehended with reference to the possibility of warranting further attention or else it presents itself as an intruder that is to be excluded, in order that we may go on with the concern of the moment. All experience is a kind of intelligence, a control of present behavior with reference to future behavior. To be in experience at all is to have the future operate in the present.

Stimulus and response, then, are complementary to each other. This is true not only at the starting-point but at every stage of the activity. As the act progresses, the stimulus progresses with it. The book on the table must become successively book-to-be-reached-for, book-to-be-picked-up, and book-to-be-opened, unless the process is to drop back to the type of reflex. This development of the stimulus gives genuine continuity, since every moment in the process comes as a fulfilment of its predecessor. We find here a relation of stimulus and response that is unique. Everywhere else this relation constitutes a serial order. Response follows stimulus like the successive strokes of a clock. A purely mechanical act is a touch-and-go affair; the stimulus presses the button and then subsides, while the nervous organization does the rest. In conscious behavior, on the other hand, stimulus and response keep step with each other. A mere succession of stimuli would reduce conscious behavior to a series of explosive jerks, on the principle of the gasoline engine. To be conscious at all is to duplicate, in principle, the agility of the tight-rope performer, who continuously establishes new co-ordinations according to the exigencies of the moment and with constant reference to the controlling consideration of keeping right side up. This type of behavior is made possible by the peculiar nature of

the stimulus, and it justifies the claim that psychology is a science of behavior.

To characterize psychology as a science of behavior, however, is to invite misunderstanding, unless we add a word of explanation. The term 'behavior' has acquired a certain connotation that detracts from its usefulness. Its chief defect is that it emphasizes the activity of the organism to the neglect of the stimulus by which the activity is controlled. It suggests that the behavior in question is to be studied from the outside, so to speak, and not as a correlation of stimulus and response, which is the distinguishing feature of conscious behavior. Present-day 'behaviorism' magnifies response to the neglect of the stimulus, just as 'introspectionism' emphasizes the stimulus to the neglect of the correlated response. From our present standpoint, however, the stimulus is evidently quite as important as the response. Since the subject-matter of psychology is behavior that is directed by a certain type of control, it is the control that is properly entitled to emphasis. In other words, the changes in the stimulus by virtue of which a certain adaptation is attained constitute the proper point of departure for psychology. As typical examples we may cite the processes by which perceptions are built up, lessons are memorized, and decisions are reached. Processes of this kind present certain characteristic changes in the stimulus which may be observed and correlated with the bodily activities to which they give direction and guidance. Our task, it may be noted, is not to analyze a subject-matter whose *esse* is *percipi*, but to ascertain how the function of control is performed. We are under no obligation to read into our experiences so as to make them something other than they were. Our reference is not to hypothetical sensations, but to the facts of behavior. In making such a study the object may give us a clue to the character of the response, or conversely the response may give us a clue to the nature of the object. Visual imagery, for instance, indicates that the nervous machinery for vision is concerned in the process; and, on the other hand, the nervous fumbling of a watch-chain may reveal to us the disturbing character of the situation in which

we happen to be placed. But in any case our concern is with a process as process, with objects as related to conduct, and this is the justification for the contention that psychology is a science of behavior.

We may now attempt to translate this progressive stimulus into terms of focus and margin. Conscious behavior, so it was said, is a process in which diverse and incompatible acts are made to harmonize and contribute to an end that contains them all. The stimulus bodies forth both the response that is and the response that is to be, or the response of the moment as modified by what is to follow after. This is the reason why it is impossible to say at any given moment what is 'in' consciousness and what is not. In a sense we perceive a number of things to which we are not paying attention, such as the light in the room or the familiar chairs and bookcases. These are perceived in the sense that our total adjustment has reference to these facts. They are perceived marginally, as we say, which means that the presence of these objects, by affecting the adjustment of the moment, has a bearing on the character of the perceived object or situation; and similarly there are marginal 'images,' perhaps, of an anticipated object, in the sense that the present stimulus is affected by the responses that are still on the way. Again, we may speak of sensations of strain or movement, as a recognition of the fact that certain bodily activities are factors in the process. When the stimulus is thus interpreted with reference to the bodily processes which it controls, it resolves itself into sensations of various kinds, and as thus resolved or transformed the stimulus becomes identical with the margin or fringe. Such an interpretation of the stimulus is evidently based upon its function of controlling behavior, and since we have previously identified this function with consciousness, we may conclude that the margin is synonymous with consciousness.

By way of amplifying this point, let us return for a moment to the illustrations previously employed. The ticking of the clock that is present though unnoticed, the overtones of the note that suffuse the whole without diverting attention to their individual qualities,—in what precise way are facts of this kind

concerned in the description of the experience which they modify? A study of the clock or of the overtones can hardly pass as an analysis of consciousness; it is too obviously a specification of the conditions upon which these respective experiences depend. Such a study becomes merely an excuse for repeating the analyses of physics and reading them off in terms of sensations and images. Moreover, the transfer of all this material to consciousness looks suspiciously like a transaction in mental chemistry. Where, then, is psychology to gain a foothold? What is the meaning of these uncanny sensations and images, which nobody experiences, unless it be their character as symbols of bodily adjustment? They have no legitimate status, and psychology, by consequence, has no legitimate problem, except in so far as they symbolize those acts of adaptation which are the sole and proper concern of psychology.

There is, however, another point of view from which the stimulus may be interpreted. It was pointed out that each stage of a conscious act provides for its successor, both on the side of response and on the side of stimulus. The stimulus represents a sort of moving equilibrium. It is always off its balance, always in a process of continuous reconstruction; and it is out of this stress and strain that the new stimulus is born. It is this quality of the stimulus that we indicate by such terms as focus or attention. The stimulus as focus is a name for the stimulus as in a state of transformation, as becoming a different stimulus. The reference here is not directly to the function of controlling response, but to the succession of the stimuli. It seems evident, furthermore, that the stimulus thus construed becomes identical with object. Anything is in the focus of consciousness, or is object for consciousness, which through such a process of reconstruction determines the course of experience in the sense of determining the stimuli that are to follow.

By way of conclusion I venture to urge that a proper consideration of the facts of behavior will furnish us with a key that will unlock many a door. The conception of objects as both stimuli to response and as transition-points to further stimuli gives us a differentia for experience and also enables us to distinguish within

experience between consciousness and object. [If, however, we disregard behavior, we are bound to lose our way. The distinction between the experienced and the unexperienced is either wiped out or else is permitted to convert itself into a distinction between appearance and reality that leads nowhere and explains nothing. The significance of truth as the successful guidance of behavior, in accordance with the program laid down in the organization of stimulus and response, is lost to sight, and recourse is had to a fourth-dimensional truth or reality for the miracle of breathing life into the dead bones of our philosophic abstractions. The study of behavior constitutes a mode of approach that holds out the hope of deliverance from questions that should never have been asked. We are on a different and, let us hope, a higher level when we cease to ask how consciousness can lay hold of passive objects, or how knowledge *überhaupt* is possible, and concern ourselves rather with the wondrous activity whereby this plastic dance of circumstance which we call the universe transcends the domain of mechanism and embodies itself in the values of conscious life.

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PRAGMATISM AND SCIENCE.[1] (I.)

PROFESSOR JAMES has called pragmatism "a new name for some old ways of thinking." But pragmatists as a rule have been interested more in the new name than in the old ways. This must explain why they have generally failed to see that the first and greatest of their school was Immanuel Kant. For it was Kant who, more than any other, established the great Copernican revolution—the humanistic revolution, as I should call it—in which the center of reference in the interpretation of scientific knowledge was shifted from the world that is known to the mind that knows it. Since Kant it has been scarcely possible to conceive of a science which should fail to reflect the character of the scientific mind. Yet it seems curious that Kant should have associated the name of Copernicus with a movement that transferred the center of reference from the world to man; for Copernicus, you will remember, removed the center of our planetary system from the earth to the sun and thus gave to our world a more foreign aspect than it had worn before.[2] In point of fact Kant does something of the same kind. His world of nature is not a humanistic world in any very personal sense. Kant lived in an age whose ideal of science was still patterned exclusively after the astronomical achievements of Newton, and for which, accordingly, the type of science *par excellence* was mathematical physics. For Kant himself the two most sublime objects of thought were "the moral law within" and "the starry firmament without." And for Kant the beauty and sublimity of the celestial system lay in its eternal and unchanging regularity. To the thought of the eighteenth century this seemed to realize the perfect consistency of the divine reason. Now I suppose that there is no part of our world which is more discouraging to a humanistic interpretation, and certainly there is none less amenable to human will and desire, than this "starry firmament

[1] The first of two lectures given before the Philosophical Union at the University of California on December 5, and 12, 1913.

[2] This was written before I had seen Norman K. Smith's interesting explanation of the 'Copernican' revolution in *Mind*, Oct., 1913.

without." No department of nature offers a more striking contrast to the unpredictable variability of most of our human thinking. And yet, in Kant's view, this inflexible regularity of the heavenly bodies was the reflection of our human reason. How did Kant unite these seemingly incongruous elements? The answer is simple; he united by separating. To Kant we owe the rigid separation, still more or less current in psychology, of knowledge, feeling, and will. In Kant's psychology all of the processes of scientific knowledge, or reason, take place in a compartment of the mind which is assumed to be inaccessible to the contaminations of personal desire. By this device he preserves the inflexible necessity of scientific law while making science the reflection of the human mind.

This means that Kant's humanism was far from complete. Kant's philosophy was a humanism modified to satisfy the authority of the Newtonian physics; and it did not occur to him, as it seems not yet to occur to his pragmatic successors, that the claim of science to deal with an independent reality might be satisfied by a theory of knowledge in which knowledge is determined by desire. I might point out, indeed, that Kant's humanism is not so imperfect as it seems, even in the *Critique of Pure Reason*—for the *Practical Reason* is clearly a humanistic document. But I prefer to let the statement rest where it stands in order to bring out more clearly the meaning of that later humanism which is called pragmatism.

For the difference between Kantian criticism and modern pragmatism centers precisely upon the question of the relation between reason and desire: are they dependent or independent? Kant's humanism is made awkward by the fact that in his psychology reason is independent of desire. For pragmatism reason and desire are at least mutually dependent—if, indeed, we are not to say that pragmatists adopt the opposite extreme and make reason *dependent upon* desire. This central issue is nowhere more boldly stated than in the chapter on "Reasoning" in William James's *Psychology*. To grasp James's point I will ask you to put before you the image of an old-fashioned reasoner—the reasoner as Kant would have described him. You will find his

type in the figure of Justice blind-folded. For the first duty of the old-fashioned reasoner was to be strictly 'impartial'—to decide the case upon the basis of the evidence furnished him, and upon that alone: to all else he was supposed to be 'blind.' And he cared not what result was reached, provided only that it was reached in accordance with the laws of logic. In a word, his ideal was to be as impassive, and at the same time as coldly accurate, as an adding machine. A mere suspicion of bias, or even of personal interest, would vitiate his conclusions. Now, in contrast to all this, James maintains that reasoning is guided from first to last by a subjective and personal interest. Reasoning begins with an hypothesis to be tested; in other words, not with evidence, as the older view asserted, but with conclusions. For the matter of that, until you have first set up a theory, an hypothesis, a conclusion to be tested, there will be no evidence forthcoming. To the impartial seeker after facts the world is mere vacuity. No man of science is ever thus impartial; scientific facts are discovered because of their bearing upon interesting problems. Accordingly, in James's view, reasoning begins with a desire or purpose, with something that you wish to prove or establish; and the facts are gathered with a view to this purpose. The same purpose then determines the analysis of the facts, their definition and classification. At every step the qualities and relations among your data which you count as real are those which have a bearing upon your purpose. And, in the end, the only properly 'logical' conclusion—the only conclusion that gives truth—is that which satisfies your purpose and yields the desired result.

This gives us the essence of pragmatism. In the ordering of philosophical theories pragmatism is the enemy both of realism and of absolutism. In the vocabulary of pragmatism all vice is "absolutism." Now, realism and absolutism both teach that reality is independent of our human grasp of it; that nothing is made true by being known, much less by being desired. According to Kant, a proposition is made true by being known, if known in accordance with the rules of human reason; but, according to him, reason, though a part of human nature, is inde-

pendent of desire. For the pragmatists reason and desire are one; and perhaps we should say that desire is the one. Hence, a rational, or true, statement is the statement which satisfies our desire. A real object is an object in the existence of which we find it useful to believe. Truth is not already made, as the realists hold, but is always being made by us for purposes of our own. To be true, then, is to satisfy our purposes—that and nothing more.

For a convenient illustration of the logic of pragmatism we may take the Copernican theory of the heavens. This formulation, according to which the planets revolve about the sun, is viewed by men of science as a modern discovery; by this they mean that this relation of the planets and the sun was at least not created by Copernicus. For the pragmatists the Copernican theory would be, not a discovery, but an invention. By them a theory of the heavens would be regarded as one of the necessities, let us say, of navigation. The older Ptolemaic theory, according to which the sun revolved about the earth, had reached a stage of complexity which rendered it no longer available for purposes of calculation; and the Copernican theory was devised to take its place. A second example would be the assumption of a universal law of cause and effect. James tells us that the question of cause and effect is suggested by the attempt to discover who is responsible for a given result. But I fancy that most pragmatists would prefer to point to the practical necessity of assuming an order of cause and effect if we are to set out to accomplish any purpose whatever; if planting is not to be followed by harvest it will not be worth while to plant. Voltaire said that if God did not exist we should find it necessary to invent him. By a similar necessity, according to pragmatism, we have invented the law of cause and effect.

One of the most striking illustrations of the theory is an example which James quotes from Ostwald. "Chemists have long wrangled over the inner constitution of certain bodies called tautomerous. Their properties seemed equally consistent with the notion that an instable hydrogen atom oscillates inside of them, or that they are instable mixtures of two bodies." But

both views lead to the same *practical* result. Now, a realist would hold that this is a case *either* of the instable atom *or* of the instable mixture. One or the other must be true—we simply cannot say which—but both cannot be true, unless it can be shown that the two phrases have theoretically the same meaning. But, according to James both are equally true because, in practice, both lead to the same result. For pragmatism this is all that 'truth' can ever mean. The complex laws of science are, therefore, only so many human inventions. Each of them has a practical meaning, and the practical meaning is the sole meaning.

Thus far the meaning of pragmatism seems definite and clear. But now we are to see that what appears to be clear upon the surface may turn out to be vague underneath. Suppose, then, that we put the question, What are the human needs? Are they needs only for bread and butter or have we also intellectual and spiritual needs? Or shall we say that intellectual and spiritual needs are only disguised needs for bread and butter? On the other hand, may we not ask whether, as conscious beings, we have any need for bread and butter except as we need to eat it self-consciously? In a word, can science be satisfied with a world which as a brute fact does yield bread and butter? I need hardly remind you that these are questions of first importance; for, if we become pragmatists, they are the questions which will determine for us what kind of a world we shall take to be true; and in the meantime they must determine for us what pragmatism really means. They may convince even the pragmatist that his world is very different from what he now takes it to be. For suppose it should turn out that even the bread and butter needs are of the same type as the need of sexual gratification; that, for example, while appearing to be merely needs for physical satisfaction, they are at the same time needs for physical satisfaction in a relation of spiritual fellowship. A world which satisfied this need would be very near the world of objective idealism.

Now I think I am not wrong in saying that our American pragmatism is disposed to emphasize the need of bread and butter and to hold that spiritual needs are only bread and butter needs

disguised. At least I feel compelled to say this of the pragmatism of my friends, Professor Dewey and Professor Moore, although I am convinced that they would call the interpretation vulgar. When I endeavor to state for myself their conception of the categories of science, I seem to find but one phrase suitable. Why do we need to look upon nature as a regular succession of cause and effect? Their answer seems to be: because we need it in our business; or, better perhaps, because we need it in our factory. For the term by which they prefer to name their special brand of pragmatism is *instrumentalism*. Instrumentalism teaches that the categories of science, such as the law of cause and effect, are but so many tools or instruments—though, indeed, highly complex instruments—for gratifying our needs. And what needs? So far as I can see, the only needs to be satisfied by such instruments are the needs of bread and butter. As I have already pointed out, there must be a direct relation between the kind of world that a pragmatist takes to be true and the kind of need that he wishes to satisfy. Now, to look upon nature as a mechanism, or an instrument, after the fashion of the physicists and the chemists, does indeed satisfy the need for bread and butter. So far, it matters not whether the bread comes from a machine or from the hands of a human baker. In the words of James, both views would be equally true. And if the need is above all for a strictly calculable source of supply, then doubtless the machine view is truer. But I cannot conceive any one to be satisfied with this mechanical view of nature who feels that his need of living with her, or even upon her, is also a need for understanding and fellowship.

The question before us is therefore the question of the logic of our needs. Pragmatism, instrumentalism, humanism—in all of these views the basis of logic is human nature, and in all of them truth (whatever else it may turn out to be) is an expression of human need. Now it would be false to deny that we find it useful to treat nature as a system of mechanical causation or that this treatment is dictated by a need for bread and butter. But is this the whole story—the whole story of our needs? Of this very need a different version is suggested by Bergson, who

has also been called a pragmatist; and to my mind his analysis is far more penetrating and illuminating. Bergson agrees with the instrumentalists in holding that the mechanical conception of nature is the outcome of our need for bread and butter, but according to him it is at the same time the expression of another need. The mechanical conception enables us to have practical dealings with nature. But why? Bergson's reply is: because, to a prevailing type of mind, the mind of the natural scientist, this conception renders nature more intelligible—or, as he would prefer to say, more amenable to intuition. In a word, while the mechanical view of nature does indeed supply us with bread and butter, it is at the same time a reflection of the fact that man himself is a machinist.

To see what this means let us suppose that we are seeking an explanation of animal life. I need hardly remind you that, in spite of the vitalism of Driesch, the main endeavor of biologists to-day is to explain the life-process in terms of mechanism; and this means that a process which on its face appears to express a unity of purpose when taken as a whole is analyzed into a series of temporally independent operations each of which introduces its successor by the blind force of mechanical necessity. Bergson points out, then, that this method of producing a result is precisely what you find in a factory. For example, a kid glove which we might well suppose to be formed by the manual skill of a few persons, passes through no less than fifty or sixty hands, each of which performs a single mechanical act. The fact is that we men are unable to produce a glove as nature produces an organism, in a single and continuously coordinated act. The form and purpose of the glove are in no wise logically implied in the act of slaughtering the animal for his skin; and, though the skin be stripped, or even tanned, it is not yet determinately the embryo of a glove. In our human industry, and especially in organized industry, it seems necessary to divide the operation into a number of successive and virtually independent stages. Accordingly, says Bergson, when we seek to understand nature we read our own necessities into her. Our immediate intuition of life tells us, indeed, that the growth of an organism must be

something very different from the manufacture of a glove; yet when we attempt to bring nature to terms of practical clearness, we seem almost compelled to impose upon her the routine of the factory.

Bergson uses this illustration as an argument against 'intellectualism' and in defense of what he calls 'intuition.' In his view, what is chiefly demonstrated is the fatal mendacity of intellectual analysis, or, for the matter of that, of all analysis. But I believe that we may ignore his condemnation of intellectualism even while accepting the doctrine of 'intuition.' For my own part, I should say that it is just the intellectual, if you please to call it so, that constitutes the superiority of human life to that of the animals. It is the intellectual that elevates the enjoyment of Beethoven or of Tschaikowsky above the enjoyment of a good dinner, and it is the intellectual that transforms erotic gratification into a relation of personal loyalty and gives to this side of our nature a moral value and nobility. When Bergson calls a man an intellectualist, he means, I fancy, that the man has the soul of a mechanical engineer; and he points to the mechanical theory of nature as a depressing illustration of the engineering philosophy of life. I should prefer to point to Bergson's analysis of the engineer's point of view as true type of intellectual analysis.

What, then, is the significance of this analysis? To see its point for ourselves let us return for a moment to the instrumentalist. Instrumentalism, you remember, is the school of pragmatism which holds that the categories of science, and in particular the mechanical category, are so many instruments, or tools, for the satisfaction of our practical needs. And the instrumentalist himself, as you may now see, is none other than Bergson's intellectualist—the man who looks at the world from the standpoint of the engineer. For the instrumentalist the world is an engine; this embodies his conception of what we need. If, however, we accept Bergson's analysis, we shall say—shall we not?—that, even granting this instrumental view of science, what the scientist really seeks here, in the mechanical theory of nature, is not so much an engine as an engineer. We look upon

nature as a mechanism, not because, in some opaque fashion, the view 'works,' or yields results—what is there, in the first instance, to suggest that such a conception would work?—but because, in more intelligible fashion, this conception of *the working of nature* enables us to come to terms with her, to make arrangements with her, to anticipate her in somewhat the same way in which we anticipate the intentions of our fellow-man. All of this means that, upon any deeper analysis of motives, instrumentalism must turn out to be a form of anthropomorphism. This does not mean that I condemn it; on the contrary, I propose to defend it. Meanwhile I have suggested that the kind of pragmatism a pragmatist stands for must depend upon his conception of our human needs; and further that, as conscious agents, our need is not merely to consume bread and butter but to consume it self-consciously. Shall we not say, then, that, in the scientific construction of our world, our deepest need is for a world that shall be from our human standpoint intelligible?

To suggest that a need of this kind is in fact embodied in the formulations of science I shall ask you to recall once more the contrast between the Ptolemaic and the Copernican theories of the heavens. According to positive science the Copernican conception was nothing more than a late discovery of an eternal fact; according to the pragmatist, the Copernican conception was an invention for satisfying practical needs. But I think that the pragmatist is in danger of weakening his point, and that he lays himself justly open to the charge of creating a subjective and fictitious world, by speaking constantly as if an invention were invented out of nothing—as if, in the present case, there were no order in which the Ptolemaic and the Copernican views are definitely related. Accordingly, I shall propose the question, If the earth goes around the sun, must not the sun also go around the earth? When the question is thus stated, you perceive at once that it all depends upon which of the two you choose to regard as stationary; and then you reflect that a stationary point anywhere in the universe is just the most arbitrary of all assumptions. Why, then, do we now choose the sun to remain stationary? The pragmatist tells us that this conception is more

convenient. But then we are obliged to ask him how a conception can be more convenient except as it renders the object more intelligible; and this is to ask what it is that renders the heliocentric system more intelligible.

Suppose we put the question to the positive scientist. We receive the same answer in somewhat different terms. The preference of the positive scientist for a system which has the sun for its center is based upon the claim that this conception is 'simpler'; and for him, very curiously, the simpler conception always represents the positive outer fact. "Very curiously," I venture to say; for your positive scientist prides himself upon nothing more than upon his entire freedom from anthropomorphic superstitions. Could there be more naïve anthropomorphism than the assumption that nature always works with the fewest possible general principles? Or, in more technical terms, that she is guided by the law of parsimony? It is quite clear that we should be so guided ourselves. But this only serves to remind us that 'simplicity' is a matter of personal point of view. It is a common remark that all things are equally simple to him who understands. Your gasoline engine is complex only so long as it is imperfectly mastered. The advanced mathematician finds it simpler to deal with special problems by means of highly generalized theorems; but his mode of approach is anything but simple to a child. Now, for the older, or Ptolemaic, astronomy it was simple enough to think of the sun as revolving about the earth; but when it came to the other planets it was found necessary, upon more exact observation, to introduce subsidiary movements, or forces, in the form of epicycles; and these epicycles became so many as to render it impossible to form a single clear picture of the planetary situation. Yet, for all this, are we to suppose that a geocentric formulation is once for all impossible? That no mind could be conceived for which this formulation should not, after all, be simpler? Once more we may put the question, If any member of the solar system moves with reference to the other members, must not all the other members move with reference to this? And then will not any member serve as a center? Why then, is the heliocentric conception simpler? For

no other reason, it seems, than that this view of the situation renders the working of the system more easily conceivable and intelligible from the human, or at least from our present human, point of view.

And renders it intelligible, we may go on to say, from the standpoint of our human motives for action. For if we now inquire more closely into the advantages of taking the sun as the center of our system, we shall find that they consist chiefly in the fact that upon this assumption we may resolve the motion of each of the planets into two rectilinear forces, the attraction between the planet and the sun and the tendency of the planet to "fly off at a tangent." But what advantage do we gain by translating a curvilinear motion into two motions in a straight line? I am inclined to think that when children are told that, if the sun's attraction should cease, the earth would move off into space in a straight line, they often wonder why it should not just as well continue to move in a curve. Why must a body moving of its own momentum follow a straight line? For an answer to their question they are referred to Newton's first law, which reads: "Every body continues in its state of rest or of uniform motion *in a straight line*, except in so far as it may be compelled by force to change that state." In other words, free motion is never circular, or elliptical, or what not, but always rectilinear. And this rectilinear character, we are told, is a logical and impersonal necessity of thought. Thus the advantage of the heliocentric system seems to be that it more easily enables us to conceive the movements of the planets in terms of logical necessity—as formulated in Newton's law.

Yet I think that only a little reflection is needed to see that this seemingly most impersonal of scientific laws is really far from impersonal. A body in motion will move until stopped, a body at rest will remain at rest until moved. Why? we venture to ask. My answer is, Because this is precisely how we ourselves should behave. Newton's law simply reads into the universe that aspect of motive which makes our own action intelligible. But why must free motion be rectilinear? Again, it seems to me that (following a suggestion of Poincaré), we should say: because

our own free motion is rectilinear—because, owing to the transverse symmetry of our bodies, it is easier for us to walk in a straight line than to follow the path of a curve. True, it is not quite easy to follow a perfectly straight line. When we close our eyes in walking, we may find that, owing to an imperfect symmetry of our bodies, or at least to a difference in the natural stride of the two legs, we tend to turn to the left. But this only serves to suggest that, if we were markedly asymmetrical, the shortest distance between two points might lie in the path of a rather sharp curve. In that case, we could scarcely continue to say that a straight line is the shortest distance between two points; nor again, that a body freely moving must move in a straight line.

All of this may serve to suggest that the aim of science is not merely to find in nature an opaque and unintelligible instrument, still less to record a set of positive and absolute facts, but rather to discover in nature an activity intelligibly motived in like fashion with her own. And when our attention is once directed to this aspect of science, we find the evidences forthcoming on every side. For one more illustration I shall make use of Weissmann's theory of heredity. Looking at evolution in an obvious and popular way, we should be tempted to say, with the Lamarckians, that evolution takes place through the inheritance in the offspring of characters acquired in the life-experience of the parent. But when we try to figure to ourselves any method—that is to say, any mechanism—by which such inheritance could be accomplished, the result seems all but miraculous. That cutting off the tail of a white rat must remotely have an effect upon its offspring seems probable enough; but that it should have just the effect of producing a tailless offspring seems most extraordinary. For this reason Weissmann makes it a point to deny that the experience of the parent is responsible, in the offspring, for any positive character whatever. According to him, all the characters of the offspring are due to what he calls the germ-plasm, which in some way remains independent of the body-plasm and has been passed from parent to child unaltered since the beginning of life.[1] That some characters appear and others

[1] That is, according to the earlier and simpler form of the theory.

fail to appear is due to the selective effect of the environment. But the point of the theory is that no new character is created. The germ-plasm, then, is a mechanism—for Weissmann is careful to insist that his is a mechanical theory of life—which, through all the changes and chances of the environment, keeps the species true to itself.

By this interesting device the Weissmannians conceive that the explanation of the life-process is freed from any implications of purpose or motive. Yet we have only to reflect upon the results accomplished by the germ-plasm to have the question suggested whether these results are not themselves, like the inheritance of acquired characters, all but miraculous. Those who take satisfaction in a mechanical view of nature seem often to forget that, as Bergson reminds us, the type for all mechanical explanations is the activity of man the machinist; and then they forget that in our human world the most automatic machine accomplishes nothing whatever without human guidance. The germ-plasm of Weissmann is supposed to guide the development of the organism automatically in a certain given direction amidst the countless variations of a complex environment. When I try to conceive this in terms of any ordinary mechanical analogy I find myself driven to think of a steamship leaving Sandy Hook with the wheel lashed in the direction of Liverpool. Any one familiar with the operation of steering a ship will know that, in the absence of the constant readjustments made by the man at the wheel, the chances are even that the ship will land upon the coast of South America or of Australia. In biological terms this would mean that what sets out to be a mouse might just as well end in a cow. But in point of fact the language of the mechanical biologists suggests that they too have placed a man at the wheel. For they speak constantly of the 'control' exercised by the germ-plasm, or by the determiners of heredity. Not long ago I ventured to point out to a biologist the teleological implications of that word 'control.' His reply was that biologists must make use of the words that the language affords them. But words stand for conceptions, and conceptions reveal the character of the mind. If our language refuses to lend

itself to the description of a purely mechanical universe, it then becomes a question whether a mechanical universe is humanly conceivable and whether, in fact, the universe is actually conceived as such by men of science.

Hence, I say that the need of a machine for practical purposes, which underlies the logic of instrumentalism, is at the same time a need for a world that shall be humanly intelligible. Remember that I do not reject the practical need; I say only that for a self-conscious being any practical need must be also intellectual. But this is not all. For what our previous analysis shows us is that our needs, though practical and intellectual, are, even in their most practical aspect, *social;* in other words, the mere need of dealing understandingly with nature is a need of dealing with a fellow. To make the point clear let us suppose, in pragmatic fashion, that marriage is an instrument for gratifying the bodily need for sexual intercourse. That this is a practical need, like the need for bread and butter, I think that no honest man can deny. Yet any deep analysis of this need shows us that, even in the coarsest of men, it is a need for fellowship, for the willing response of an 'other,' and that this need survives after the bodily need has grown faint. But the same thing may be shown of the need for bread and butter. At first glance you may be disposed to say that you have no real need for social relations with a baker, but only for a machine which will supply bread. But this, you will doubtless admit, is a reflection of the distracting influences of our modern life, which, by its vastly enlarged means of communication, imposes upon each of us a larger set of social relations than he can properly assimilate. Unless you are a housekeeper, you have probably no dealings with the baker, but receive your bread from the hands of your wife or your household servants. But this only serves to remind us how vital is the need of having our practical wants satisfied by those who are personally interested in us. And if you had to deal personally with the baker, day by day, you could not but feel the need of making your communications cordial; they could hardly remain merely impersonal. Now, it seems to me that a motive of just this kind is implied, only more remotely, in the attitude of the scientist towards

nature. It was clearer in the older scientist, before a convention of respectable impersonality, or a superstition about working for humanity, had forbidden the scientist to be at the same time a poet and a lover of nature. Yet I think it fair to say that the successful men of science are still generally those who select for their scientific study the objects that personally appeal to them. The botanist is a lover of plant life, the physicist a lover of machines. James quotes a saying of the French artisan about his favorite tool, *ça me connait*, it recognizes me; or, it speaks to me. May we not say that the deepest need of the natural scientist in dealing with nature is the need of having nature speak to him? Call this superstition, if you please, but what other motive will you invoke to explain his genuine personal absorption, what other motive will sustain his unwearied pursuit, and how else may we justify his enthusiasm for science as transcending the considerations of practical and social utility?

I hold, then, that if we accept the pragmatic doctrine that truth is determined by our needs and then undertake to make an analysis of our needs, we can find no halting-place for pragmatism short of a complete humanism. This term has been applied to the doctrine both by James and by Schiller. But by 'humanism' I mean a more thorough realism than either seems willing to avow; or, if apologies are due, they are due to Mr. Schiller. I find myself unable to justify the position—to me lackadaisical and sceptical—that pragmatism is merely a 'method' for dealing with experience; for I cannot conceive a method of investigation which does not imply a theory of the nature of what is to be investigated. And to me both 'pragmatism' and 'humanism' imply, even as methods, that we are dealing with a world assumed to be motived in like fashion—as remotely like as you please, yet in like fashion with ourselves. This I take to be the meaning of any whole-hearted humanism. But if this be its meaning, then we are obliged to ask why the teaching of pragmatism falls short of this; why does pragmatism take refuge in instrumentalism? This question brings to our attention the strange reverence of the instrumentalists for the point of view of 'modern science.'

When we venture to suggest that truth is something that is

always being made—and in what sense we may say this I shall ask in the next lecture—we are at once confronted with the fact that in 'modern science,' so called, there is something peculiarly absolute and final. The attitude of modern science is well expressed in Comte's theory of the three stages in the history of thought: first the stage of theological superstition; then the stage of metaphysical abstraction—for Comte not less superstitious; and now, finally, the stage of positive fact. Positive and hard fact—like Mr. Gradgrind, your modern scientist is above all things a man of fact. In this final revelation, human thought, groping through the ages, has found at last its solid basis. In the strictest sense, however, modern science is a matter of the last sixty years. Its gospel of method is to be found in John Stuart Mill's *Logic*. And the peculiar thing is that while Mill and Comte were founding a science of positive fact, Darwin and Spencer and Wallace were introducing a method for the transmutation of all fact under the name of 'evolution.' The theory of evolution suggests clearly that 'modern science' is only one of the stages in a never-ending process. But scientists in general appear to be blind to the implication. And nothing is more offensive to a man of science than to suggest that future ages may look upon our modern science as we now look upon mediaeval scholasticism, simply as one stage in the history of thought.

In the theological and metaphysical stages the world was interpreted from a human point of view. The positive stage appears to have discarded all points of view. Your modern scientist claims to look at facts with the naked eye, and I dare say that, to avoid possible distortions, he would prefer to discard the eye. At any rate he is firm in holding that his thought is in no wise colored by human motives; and to make his point clear he is never weary of a humorous reference to the older days when nature 'abhorred' a vacuum. In his view all humanistic interpretations of nature are anthropomorphic or animistic; and all animism is primitive animism. They belong to that stage of thought in which, for example, the West African negro explains the drowning of his brother on the ground that the river bore him a grudge. In the eye of the man of science, the purpose of

science is to free our thought from all motives whatsoever, to disentangle the fact from the mental processes of the knower and to see it as it is, uncontaminated, dry, hard, cold, and absolute.

Now, I have no wish to suggest a disrespect for science; indeed, such a wish would be rather futile. But I think that respect may always fall short of stupefaction. Much of our recent philosophy seems to have forgotten that one function of philosophy with relation to science is that of an interpreter and a critic. The new realism, of which so much is heard at present, seems to have repeated the experience of Saul on the way to Damascus, but without a corresponding revelation. The same influence has been at work upon the pragmatists, in which, again, they repeat the story of Kant. We have seen how Kant's humanism was cut short by a blind reverence for the Newtonian physics; and how, in his psychology, this resulted in an illogical and wholly artificial separation of reason and desire. In like fashion the logic of pragmatism is cut short at the point of instrumentalism. Like Kant himself, the pragmatist wishes to be in good repute among natural scientists. Which of us, asks Thackeray, would not like to be seen on the arm of a duke? Or, in the present case, on the arm of a millionaire? Yet, as it happens, the scientist of to-day is the typical absolutist. Nothing is so absolute as the absolute fact, and no theory of nature is so rigid in its demands as the mechanical theory. Perhaps we may say that this mechanical logic is just the essence of all absolutism. Yet at the same time it is true that no intellectual movement in the history of the race has been so brilliantly successful in producing tangible results. In the presence of this dilemma the pragmatist demonstrates his regard for modern science by taking the mechanical theory without criticism; and then he makes peace with himself by interpreting the mechanism as an instrument for the satisfaction of practical needs. The result is instrumentalism. By this compromise the path is closed to any further development of a humanistic logic. The very name means that the instrument, now once for all accepted as such, stands as a barrier to any deeper or more human interpretation of our needs. In instrumentalism, as Bergson would say,

thought and logic have congealed. From the standpoint of a pragmatic logic, instrumentalism is an unholy alliance with absolutism.

Now, it seems to me quite possible to suggest a more honorable agreement which will better satisfy both the realistic claims of natural science and the humanistic demands of pragmatism. The terms of this agreement will be outlined in the next lecture. In the few minutes that now remain to me I shall endeavor to show how we may meet some of the objections that lie in the way of a whole-hearted humanism. First we may meet the charge that such a view of the world must be condemned as anthropomorphic by asking how any view of the world which is possible for human beings could fail to be anthropomorphic. How are men to know the world except just in the way that men can know it? How are they to conceive of God except in their own likeness? If the world is wholly foreign to themselves, then how can it be known at all? If it be objected that, at any rate, knowing should be independent of desire, then we may appeal to all human experience to show that knowing is impossible without the illumination of desire. Take any situation you please. Let it be the family dinner-table. Apart from the sympathetic interpretation of personal desire, that scene would be wholly unintelligible; as formless as the arrangement of the stars in the heavens; as meaningless to you as the most mysterious of the ceremonies of primitive life. For the matter of that, you could not even discover the facts. It would not occur to you to suppose that the act of raising the cup to the lips meant the passage of the liquid down the throat. Accordingly, when the modern scientist tells us that he has discarded all points of view and has dispensed with all human interpretations, we may reply by telling him that his position is incomprehensible and absurd; he might as well boast of having discarded his eye. Knowledge, we shall tell him, transcends everything, but discards nothing. Man is a far more independent animal than the lion or the horse, though physically far weaker—not because he ignores the limitations of his physical organism, but because he so thoroughly understands them. In like manner we transcend

the prejudices of our human point of view by becoming aware of them. No error lies in the operation of motives; in an unmotived world there could be no truth. Error arises when the motive is blind to itself.

And therefore when we are charged with 'primitive animism' we shall reply by gently suggesting that there is a difference—a difference as wide as the world—between a primitive animism and an intelligent animism. And the difference is logically of the same order as the difference between a provincial point of view and that of a cosmopolitan and humane culture. The primitive animist corresponds to the provincial American who regards the Frenchman as a monkey, the German as a pig, and the Englishman as a roaring bull, but who is most of all unable to characterize himself. Yet he cannot learn to know the alien races by ignoring his own race or nationality, or by forgetting himself, but only by interpreting their behavior in the light, extended through reason and imagination, of his own motives. To be able to do this is the first sign of intelligence in social life. Why should it not be a sign of intelligence in dealing with nature? It is true that nature, and especially inanimate nature, is inconceivably more remote a neighbor than any of our human fellows. A humanistic philosophy is in no wise logically bound to make the universe smaller or less impressive. It can quite freely admit that there are more things in heaven and earth than are even dreamt of in our philosophy. Let it be so. If we are to have a philosophy, if the universe is to be known, a relation of intercourse must be established between the knower and the known; and no intercourse will be established except so far as the universe can be made in human terms intelligible.

But now there is a more fundamental objection, the consideration of which I have reserved for the next lecture; yet I prefer not to close without a preliminary announcement of the issue. When the pragmatist asserts that the truth is what he finds useful to believe, the realist, or natural scientist, meets him with the question, But what of the facts? And the pragmatist then retorts by saying that any unwelcome experience he will decline to treat as a fact. But this only means, so far as I can see, that

the distinction between truth and fiction is thoroughly artificial and capricious; and this is the charge which is most frequently —and, I should say, justly—laid at the pragmatist's door. The realist will then meet him with the following disjunction: either, he will say, truth is a matter of your needs; and then you will be unable to distinguish truth from fiction—for how could you need anything but truth? Or truth is independent of your needs; and then your needs have nothing to do with it. For only by a miraculously preestablished harmony could you expect that what you need to have true would at the same time be independently true. This disjunction appears to me to be palpably false. Yet it seems to be accepted both by pragmatists and by realists; by the pragmatists when they refuse to discuss the question of independent truth, by the realists when they deny that truth is in any way created by being known. I hold that truth may be both the satisfaction of our needs and independent of our needs; and that unless it is both of these it is not truth. How this may be I shall endeavor to show in the next lecture.

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BERGSON, BERKELEY, AND PHILOSOPHICAL INTUITION.[1]

IN the philosophy of Bergson the doctrine of intuition is of central importance. It is intuition, not conceptual thinking, which brings us into sympathetic acquaintance with mental reality. Contrasted with concepts, it enables us to understand the external and relative character of our thought about the world. In philosophy it conducts us to the center of the metaphysical problem—away from the misleading shell of common knowledge, which is framed for action, to the heart of that evolving creation in which the world consists.

Nevertheless, the precise meaning of intuition is difficult to grasp. The reader finds it so. And Bergson himself affirms the difficulty—or should one say, the impossibility?—of comprehending this central instrument of mind. It is not conceptual. Therefore, it cannot be described in terms of language. Images aid in the advance toward it; but even the last image fails, since it is only an expression, a derivative of the intuition, not the magic form itself. We reach it most nearly, when we study many of its imaged expressions, proximate to their source, and seize the movement of thought, the direction, which in their several ways these images all color, but which severally, also, they all transmit.

In view of this difficulty, Bergson has taken pains to illustrate his intuition by examples. It is compared to the intuition of the writer, who creates his plot; whereas the reader reconstructs it, or seeks to, by putting together the sentences and words. It is like the intuition of the artist, whose colors or whose marble body forth the vision of his work. Words do not compose the story, they express it. The figures on the canvas do not compose the picture, the composition is merely the development of the creative idea. The writer or the artist experiences his art, as by living experience we penetrate to the vision of our inner selves.

[1] Read before the American Philosophical Association, New Haven, December 31, 1913.

But, in the event, intuition proves the instrument of metaphysical knowledge. So there is room for illustration of a different kind. By objective examples, historically attested, philosophical intuition may be shown accomplishing its task. This opportunity Bergson has taken in his paper before the last International Congress of Philosophy, and which the *Revue de Métaphysique et de Morale*[1] has reproduced in printed form. The title of this brilliant discussion is *L'Intuition Philosophique*. Its aim is to show by historical examples that intuition—unique, simple, inexpressible—is the center of all philosophical work, or at least of all philosophy which deserves the name. No great philosopher, it is argued, has ever said more than a single thing. Or rather, he has sought to say but one, the full expression of which itself he has never entirely reached. And this primary intuition is independent of time and circumstance. A philosophical system is not born of the contemporary discussions to which it stands related. These supply only the shell for the animating idea. Like the words of the writer, or as the materials of the artist, they aid in the manifestation of the intuition, in bodying it forth. But they do not constitute it. The generating idea is never a synthesis of pre-existing materials. Neither the scientific theses of the time, nor the results of earlier thinking, make up the central doctrine. It employs these to express its inner meaning, or to develop it. But they neither constitute this meaning, nor do they give it birth. "The philosopher," to quote exactly, "might have come several centuries earlier. In that case he would have had to do with a different philosophy, a different science; he would have proposed other problems; expressed himself through other formulas; not a line, perhaps, of all that he has written might have been the same; and nevertheless he would have said the same thing."[2]

This position Bergson illustrates by Berkeley's system. He finds in Berkeley four "fundamental theses." The first is the *idealism;* the second, the *nominalism;* by the third Berkeley affirms the *reality of spirits and their analysis in terms of will;* the last defends his *theism*. These theses, moreover, interpenetrate.

[1] Vol. 19, 1911, pp. 809–827.

[2] *Op. cit.*, p. 813.

They are not detached, the one isolated from the rest; they mutually imply one another in an organically related whole. But still we have not reached the heart of the Berkeleyan thought. The organic figure brings us near it; yet the organic system is not the soul, but only as it were the body of the thought. And this thought, this intuition cannot be completely stated. Language is conceptual, and explanation restricted to words. Our sole resource must be to find some mediating image (*image médiatrice*), an image perchance which hovered before the mind of the original writer, or which we may by analogy ascribe to him; and let this serve as the shadow to the substance which projects it, as an indication of that which can never be entirely made known.

In Berkeley's case Bergson suggests two such images. The first is visual, but it is only faintly indicated in the original. Matter, under this figure, may be looked on as a thin film, transparent as between God and man when the philosophers let it be,[1] but roughened and thickened to the point of darkness, when they add the notions of substance, of force, and extension to it. The image more fully Berkeleyan is auditory. Matter is the divine language, of which we miss the sense only when metaphysics diverts us from the meaning of the words to the sounds themselves. If we make these independent entities, we lose the message which they bring; if we take them as mere symbols, we catch in measure the significance of the thought. And this meaning, this message is Berkeley's creative intuition, the principle which he had to impress upon the world, the movement, the direction of his thought. As such it informs all his works. The different fundamental theses are only various modes of expressing it, or detailed ideas accruing to the central principle from its contact with contemporary opinion. For Bergson concludes concerning Berkeley as before of philosophy at large:

"In other times, Berkeley would no doubt have formulated other theses; but, the movement being the same, these theses would have been situated in the same way with reference to one another; they would have had the same mutual relation, like new

[1] *Une mince pellicule transparente entre l'homme et Dieu*, p. 819.

words which continue the vehicles of an old meaning; and it would have been the same philosophy."[1]

The more one studies Bergson's argument and compares it with other, extended statements of his doctrine, the more difficult it becomes to frame a simple criticism. Over against much of our historical philosophy, the Bergsonian type seems like that which he most commends—like living insight contrasted with the dead husks of thought. How directly in the present case he leads us to the heart of Berkeley's philosophy. We are arrested neither by the immaterialism, taken for itself alone, nor by the nominalistic empiricism on which the denial of substantial matter was founded. Bergson penetrates more clearly than this to Berkeley's innermost thought. It was theistic idealism or idealistic theism which the good bishop had at heart; and if we miss this, or rather when we miss this, we miss in literal fact the movement, the direction, if you will, the intuition which informs the whole.

So far the temptation to agree is strong. The doctrine of intuition in its historical application and employed by a master of insight does vouchsafe revelations of truth. But when the instance is more concretely tested, doubts of a disturbing kind arise. In the case of Berkeley, more than in regard to many thinkers, the later world possesses the records of his philosophical activity. We know the contemporary conditions to which his idealism was an answer. We have his *Commonplace Book*, which details the questions that passed through his mind during the early fruitful years at Dublin. We possess accounts from friends and from critics of the youthful genius. We can follow his development through the conflicts with the Freethinkers to the culmination in the Platonizing idealism of the final phase. And when Bergson's results are compared with these indubitable records, it becomes less possible to accept them. Or rather, the doubt should be put more sharply: when his account of Berkeley is compared with the historical data, his conclusions appear of a hazardous sort.

As an example we may consider the thesis that Berkeley said

[1] *Op. cit.*, p. 820.

but one thing, with all his other doctrines merely ancillary to the central theme. Now Berkeley did say one thing, said it supremely, as Bergson has so finely pointed out. This principle, moreover, was conceived in Berkeley's earliest years. In the works which he himself published it is announced only by degrees. And scholars are aware that there were stages in the development of the principle, even after it had been announced. From the *Theory of Vision* to *Siris* there is progress in Berkeley's conception of his own doctrine as well as in his communication of it to a scoffing world. But the young student at Trinity College had grasped the principle which was to direct the speculation of the Bishop of Cloyne. He was busy with the problems suggested by Locke's *Essay;* he was at grips with the implications of mechanical science, at war with Deism and freethinking. Deliverance comes through the idealistic conception of the world. "I wonder not at my sagacity in discovering the obvious tho' amazing truth"—so he exclaims in the *Commonplace Book*—"I rather wonder at my stupid inadvertency in not finding it out before—'tis no witchcraft to see."[1] And again, he writes in the last entry, as he looks forward to the Treatise which was to follow: "The whole directed to practise and morality—as appears first, from making manifest the nearness and omnipresence of God; secondly, from cutting off the useless labor of sciences, and so forth."[2]

Theistic immaterialism, then, formed Berkeley's central aim. But was it the sole purpose of his thinking? Were there no other motives present from the start? At this point also the records are suggestive. Indeed, the answer is hinted by the second of the passages which have just been quoted. For it is evident that Berkeley's interest is not confined to his religious philosophy. He plans to reform the sciences as well as to defend the faith. Mathematics, for example, early attracted his attention. In fact, he rates his knowledge of the discipline higher than mathematicians by profession are willing to allow. But mathematics, like metaphysics, suffers under the misleading doctrine of abstraction. To escape, it must discard the conceptions of the schools. Abstract ideas of number, extension in the abstract,

[1] *Works*, Fraser's edition, 1901, Vol. I, p. 80.

[2] *Ibid.*, p. 92.

infinite divisibility, and the like—such notions must be banished, if the science is to be securely grounded.[1] Their presence here is as pernicious as in metaphysical thought. The one salvation for both disciplines is to reduce them to terms of concrete experience, "to remove the mist or veil of words" which "has ruined the schoolmen and mathematicians, lawyers and divines."[2]

Similar conclusions hold for Berkeley's view of natural philosophy, as it then was called.[3] Indeed, in his view and in his phrase, the "doctrine of abstraction [is] of very evil consequence in all the sciences,"[4] and "words have ruined and overrun" them all.[5] And now we know the conditions which suggested this conclusion. It is Locke's *Essay* which Berkeley studies, and Locke's doctrine which, by criticism, he develops to his own. The *Commonplace Book*, the Introduction to the *Principles*, in fact, all the earlier works abound in references, in quotations, in arguments which make the connection clear as few connections are demonstrated in the history of opinion.

Two results, then, are established: Berkeley's nominalism was not confined to his idealistic doctrine; in large measure, it was suggested by his study of Locke. But these conclusions Bergson would no doubt accept.[6] The crux appears if we consider the relation of the nominalism to the central principle. Was the former merely the vehicle of the idealism? Was it Berkeley's instrument simply; an instrument, moreover, which proved inconvenient as his doctrine developed, which required modification or even partial abandonment in the later stages of his thought? Is it true that this and the other fundamental theses, although they formed organic factors in Berkeleyanism, were nevertheless

[1] Cf., *e. g.*, *Principles of Human Knowledge*, §§ 118–132; *De Motu*, §§ 52–65; *The Analyst*, §§ 35–7, Queries 7, 8, 20; *A Defense of Free-thinking in Mathematics*, §§ 45–8.

[2] *Commonplace Book*, p. 33.

[3] *Cf., e. g., Principles of Human Knowledge*, §§ 101–117; *De Motu, passim.*

[4] *Commonplace Book*, p. 26.

[5] *Ibid.*, p. 40.

[6] Although it is difficult to understand the incidental nature of the reference to Locke in the following account of Berkeley's forerunners: *Ainsi, avec des philosophes déjà anciens ou même, si l'on ne veut pas remonter trop haut, avec Descartes et Hobbes, auxquels on pourra adjoindre Locke, on aura les éléments nécessaires à la reconstitution extérieure de la philosophie de Berkeley. . . .* op. cit., p. 815.

relative and incidental—media of expression merely, adopted by the central intuition "because it encountered on its way the ideas and the problems" of the time?[1] The issue, it must be admitted, is complex. Complete demonstration perhaps is not attainable. Despite the abundance of the historical evidence, it is possible to argue that the conditions from which Berkeley's nominalism sprang acted simply by suggestion; that the nominalism was not a constituent of the principal thesis; that, at most, it served to call forth the idealistic theism, or, as Bergson might phrase it, to manifest it forth.

But while this view is technically defensible, it seems a hazardous conclusion. The data do not forbid it absolutely, but they render it to a high degree improbable. We can imagine Berkeley possessed of—or should we rather say, possessed by?—his chief thesis and centering around this the ideas which he gathers on his course. He studies Locke and Newton; he meditates on Deism; as the years increase and the way grows somber, he is oppressed by the practical evils of his time. For all such "the principle" supplies the panacea. Besides it naught is of essential value, nothing other than expression, mediation, or detail. And these are added to the principle; they do not enter into it or constitute its parts. It does not arise from them in any measure; they derive their significance from it, and in other times or circumstances it would have used symbols of a different type. It is possible, abstractly possible, so to conceive the situation. But the view flies in the teeth of all historical probability. Contemporary ideas meant much more for Berkeleyanism than media of expression; they supplied the conditions of its existence. By accepting—or, more often, by rejecting—them Berkeley created his own system. Factors which they supplied, or views which he evolved to counteract them, entered into his philosophy as constituent elements of its life. So *a fortiori* of the principles which Bergson terms the fundamental theses. It is impossible to believe Berkeley possessed of some one of these, even the supreme one, first, before the others in time, and adding the latter as symbols subsequently acquired. It is difficult, nay, it is

[1] Bergson, *op. cit.*, p. 820.

hazardous to suppose that any one was logically prior in the absolute sense and altogether dominant of the rest. The historical data, fairly construed, yield a different picture. We see a mobile thinker, quick, creative from his earliest years. He is absorbed in the problems of his age, the while he transforms them by his genius. There is indeed an informing spirit in his philosophy, a movement, a direction, if you will, an intuition, which pervades the whole. But this is no transcendent principle, detachable from all conditions and forms. When we so interpret it, do we not in fact repeat the fallacy of abstract conception which Berkeley and Bergson both invite us to abjure? If it is fatal to overlook the spirit of the system, it is also error to think it apart from its integral elements. These do not constitute it by any form of simple combination. But neither does it exist in independence of them, nor without them exert its influence in the world.

In the paper cited the broader implications of the discussion are brought in as corollaries of the principal argument. As Berkeley's system was related to the ideas of his time, so—Bergson contends—philosophy stands related to the sciences. It is not a mere summation of the results of these, nor derived from them by any synthetic process. Philosophy and science, on the contrary, specifically differ. Their methods, their instruments, their outcome are of contrasted types. Science is conceptual, divisive, and if one may use the word, multiple. Philosophy proceeds by intuition; it is a simple process; it penetrates to the center of the evolving world. It uses the sciences, indeed, and adjusts its statements to them. But the connection is not motived by the sciences; the impulse comes from within, unsuggested by outer conditions. Or to quote Bergson's words: "The work through which philosophy appears to assimilate the results of positive science, like the operation in the course of which a philosophy seems to reassemble the fragments of earlier philosophies, is not a synthesis, but an analysis."[1] And again, *philosopher est un acte simple*.[2]

In relation to this conclusion only one question can now be

[1] *Op. cit.*, p. 824.
[2] *Ibid.*, p. 825.

suggested: How does it harmonize with Bergson's own example? Would the world have benefited by his incisive thinking, would he have possessed his own intuition, had the scientific progress of the last two generations been other than it was? Suppose Darwin had never written, would the new philosophy have been the same, only expressed in a different 'language'? And is biological evolution merely an outward detail of the doctrine —or one of its constituent and fundamental factors? In truth, the relation of philosophy and science does resemble the interrelation of philosophical systems. In neither case is the procedure mere summation—but, on the other hand, is it ever mere utilization, mere expression? A philosopher works under the conditions of his time; a genius, he refashions and transforms them. Philosophy rethinks scientific conclusions in the light of its own concepts. The work of each is more than combination; but I do not see how it can be exalted—or degraded—into manifestation alone.

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REVIEWS OF BOOKS.

Abhandlungen Zur Erkentnisstheorie und Gegenstandstheorie. Von ALEXIUS MEINONG (Gesammelte Abhandlungen, II Band) Leipzig, J. A. Barth, 1913. —pp. x, 554.

This volume is the second of a projected series, which shall ultimately include the many and varied contributions which Meinong has made to philosophy and psychology in thirty-five years or more of continuous and fruitful labor. When completed, the collection will contain, beside the present volume, one on Psychology and one made up of papers dealing with Theory of Value and various other topics.

The repeated demand for new editions of some of Meinong's more important monographs, the *Theory of Relations* (1882), and the *Theory of Value* (1894), is in itself sufficient occasion for the contemplation of some plan by means by which they might be made accessible. For the unusually elaborate and comprehensive character of the present undertaking the editors, five of Meinong's former pupils, have found their justification in the peculiar unity and continuity of the work of this investigator to whom philosophical students are learning more and more to turn for scientific stimulus and exact method. That their conscientious work is also a labor of love is emphasized by the choice of this means of doing honor to their teacher on the occasion of his sixtieth birthday.

Under the editorial supervision of Professor Alois Höfler of Vienna, a system of notes has been developed which gives a complete view of the relation of these papers to each other, as well as to the author's later works. Wherever he has retracted or modified important positions the fact is carefully noted, and in matters both of thought and terminology the earlier works are brought fully up to date. The notes to the present volume are furnished by Professor S. Witasek, and Drs. E. Mally, W. Benussi-Liel, and A. Fischer, and the editorial work in each case is exceptionally well done. The editors have also furnished a complete list of Meinong's published works and an extensive index.

The "famous discoverer of the Gegenstandstheorie" as a French critic has called him, has long seen in the elaboration of a "theory of objects" the goal of all his labors. It is in this spirit that his as yet

unpublished lectures in Gegenstandstheorie and Logik are conceived and his reconstruction of Werttheorie is taking place. It is this conception of Gegenstandstheorie also, which the editors recognize as the immanental end, so to speak, of the present collection of papers. Measured by this standard, the first paper, "Zur Relationstheorie" (*Hume-Studien* II), (1882) represents, it is true, an 'überwundener Standpunkt.' Relations are still conceived as a wholly psychological matter. It is not indeed until the later paper, "Über Gegenstandstheorie" (1904), that we find the theory of relations finally subsumed under a general theory of objects. In the meantime, the whole question of relations and complexes has been worked over in his paper, "Zur Psychologie der Complexionen und Relationen," where he opposes the subjective view for the first time, and in the *Erfahrungsgrundlagen unseres Wissens*, where the objectivity of relations is made a central point in one of the strongest arguments for realism. Read, however, in the light of the paper on "Gegenstandstheorie," the notes to both of which are furnished by Dr. Mally, it furnishes not only one of the most important of Meinong's contributions, but also what is still one of the best introductions to the whole problem of relations.

The second paper, "Zur Erkenntnisstheoretischen Würdigung des Gedächtnisses," is one which is perhaps least known to English readers, but which will especially repay careful study. In this early paper (1886), will be found a line of thought somewhat similar to the argument for intuitive judgments of memory which Mr. Russell has made familiar, but incomparably better worked out. Here appears also for the first time, one of the most original and also most difficult of Meinong's conceptions, namely that of conjectural evidence (Evidenz für Vermutungen) and the doctrine of an immediate evidence for probability which it seems to imply. Prior to this study only evidence for certainty was recognized, but the obviously intuitive character of the memory judgment, combined with its equally obvious lack of certainty, forced into prominence the idea of "conjectural," as a peculiar kind of evidence. The extent to which this concept has figured in Meinong's later investigations is well known to those familiar with the *Erfahrungsgrundlagen*, where it serves as the starting-point for a new solution of the old problem of the knowledge of the outer world, and with *Über Annahmen*, where the problems of possibility and probability, with the special evidence that attaches to them, appear more and more in the foreground. The wholly objective theory which he has been developing (see notes 23, 24, pp. 212–13) is to find a final formulation in his forthcoming book, *Über Möglichkeit und Wahrscheinlichkeit*.

The third and fourth papers, "Uber die Bedeutung des Weberischen Gesetzes," and "Über Gegenstände höherer Ordnung und deren Verhältniss zur inneren Wahrnehmung," scarcely require any special notice here. Their contents are too well known, their discussion is a part of psychological history, and has, indeed, found its way into the text-books. But for the retrospective eye they have still another kind of interest, for they reveal the essentially 'scientific' origin of the 'Gegenstandstheorie,' and emphasize that characteristic of all Meinong's thinking, the start from the specific problem. "Weber's Law" is in part a dispute with J. von Kries over the possibility of mental measurement of intensive magnitudes in particular, but it ends in a general theory of quantity and measurement which was later to find its place as a part of Gegenstandstheorie in the *Untersuchungen*. The treatise on "Objects of Higher Order" is in part a dispute with F. Schumann, occasioned by the latter's attack upon the purely psychological positions in Meinong's earlier paper, "Zur Psychologie der Complexionen und Relationen," but it is also a long step in the direction of the clear distinction between psychology and Gegenstandstheorie.

As to the first, Meinong would doubtless now rewrite much of his "Weber's Law." Some of his later views may indeed be found in one of the contributions to the *Untersuchungen*, "Zur Gegenstandstheorie des Messens." But even here, as Witasek in his notes points out, the result is not psychological, but rather a part of the theory of relations or objects in general. For the various physiological, psycho-physical and psychological interpretations of Weber's Law is explicitly substituted an interpretation which brings it under a general theory of relations, later to be developed as a part of the general theory of objects.

The same general development is even more clearly seen in the paper on "Objects of Higher Order." Here the denial by Schumann that "inner perception" gives any evidence of the presentation of such objects, leads to a critical over-hauling of the entire concept of apprehension (Erfassen) of objects, with its tacit identification of such apprehension with presentation (Vorstellung). From the difficulties involved in the idea of presentation of relations and complexes, Meinong is led to his doctrine of judgment and assumption developed in Chapter 8 of *Über Annahmen* (see note 26, p. 474). In the classification of objects, complexes, and relations, one finds also a step in the general progress toward the systematic treatment of the Gegenstandstheorie.

This review has sought to suggest the salient points which a rereading of these papers would bring to mind. It might equally well, perhaps better, have followed a topical method, which the admirable notes would have made easily possible. One might follow the development of the concept of the *apriori* in Meinong's thought (actually made use of by the editors in the introduction to show the use of the notes. Or one might trace, in close relation to this, his doctrine of evidence, the notes upon which point alone (see p. 182, (note 128), p. 176 (36), p. 174 (13), p. 211 (14), etc.) furnish a complete view of his position,—a position, moreover, which, with its distinctions between certainty and evidence, (according to which, while certainty is a variable determinant of *acts* of judgment and assumption, evidence is a constant part of the *objective content* of judgments and assumptions) and between evidence for certainty and for possibility and probability, constitutes by far the most adequate and consistent theory of evidence yet developed. A number of such topics suggest themselves, such as his doctrine of apprehension, of objects and objectives of various types, cognitive and emotional, and his theory of judgment and assumption. All of which would not only serve to bring out Meinong's most important contributions, but also to show the development of his thought from 'psychologism' to a 'theory of objectivity.'

The paper, "Über Gegenstandstheorie," which closes the collection, is well known through the discussion and criticism of the *Untersuchungen zur Gegenstandstheorie und Psychologie* in which it first appeared. It has also been given an extended review in this Journal (Jan., 1906). Doubt as to the sufficient basis for such a science—of a science which "should be concerned with the given entirely without reference to its existence," and "to which," accordingly, "all that which can be known directly from the nature of the object, therefore *a priori*, should belong," has been pretty generally expressed, and in the review referred to the present writer shared that doubt. It is only fair to say that, viewed in the perspective which the present collection affords, Meinong's contention for the need of such a science receives additional justification. One becomes aware of a growing accumulation of problems which the methods of psychology, logic, and epistemology cannot solve, and of the existence of objects of thought and knowledge which only with difficulty find a place within their boundaries. Meinong's arguments against the identification of the 'theory of objects' with 'pure logic' have seemed to the present writer more and more convincing; and if, as he claims, and the claim is not without justification, science and

philosophy have long been unconsciously engaged with problems of Gegenstandstheorie, and much of it is to be found in the philosophies of the day without bearing the name, it is desirable that such a body of knowledge should be fully and consistently developed.

Meinong is certainly the most individual, and in some respects the most notable, of the many who have come up out of psychologism into the 'promised land' of a theory of objectivity. To attempt to estimate the place of his investigations in this general movement would doubtless be as undesirable as futile. The judicious reader has long since learned to note a community of ideas where differences of terminology and of the schools tend to obscure relations. For the study of this movement, however, this collection of papers,—retracing as it does the steps of one who was breaking his way through, making his own tools as he went, years before the problem had attained its present importance, affords a document of no slight importance.

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Dante and Aquinas. By PHILIP H. WICKSTEED. London and Toronto, J. M. Dent and Sons. New York, E. P. Dutton and Company, 1913.—pp. ix, 271.

This lucid treatise, "being the substance of the Jowett Lectures of 1911," is one more sign of the growing semipopular interest in mediaeval culture taken as a whole—scholastic philosophy not excluded. Time was, and not so long ago, when the general reader, though not indifferent to Gothic architecture, or to the *Inferno* of Dante, yet blind to the glory of the *Paradiso*, conceived of mediaeval thinkers as busied with puerile contentions about the number of angels that could dance on the point of a needle, or the bearing of the doctrine of transubstantiation if a mouse partook of the bread which was the body of Christ. In fact, the general reader did precisely what he accused Aquinas and the rest of doing; he failed to look at things with his own eyes before pronouncing judgment. A glance, not at some superficial sketch of the history of philosophy, but, let us say, at the *Summa* of Aquinas itself, is enough to convince one that there was a subject which the mediaeval mind investigated at first hand as well as systematically; and that subject was human conduct, bad and good, its nature and results. This, of course, is the subject matter of Dante's poem, which is an epitome of the Middle Ages, as every one would allow. But our generation is also on the point of discovering that there is an essential relation between the great, orderly, imaginative

structure of scholastic philosophy, the architectonics, as one might say, of mediaeval thought, and the quality of mind and feeling embodied in the French cathedrals and in the grand structure of the *Divine Comedy;* in other words, that we cannot understand in its larger aspects the life of the period which gave ours life, we cannot sympathize with the manifestations of vital energy in the art of modern times, as opposed to classical antiquity, without rectifying our notions of scholastic philosophy.

Naturally, any wide-spread understanding of mediaeval thought among casual students of literature must be preceded by the investigations of specialists, and ushered in by comprehensive works of a more popular sort like Henry Osborn Taylor's excellent volumes on *The Mediaeval Mind.* How great has been the renaissance of scholarly interest in the main intellectual movement of the Middle Ages was ably shown five years ago by Dr. Joseph L. Perrier, whose monograph on *The Revival of Scholastic Philosophy in the Nineteenth Century* is itself an additional evidence of the tendency he chose to demonstrate. The extensive modern literature which he discovered, emanating not merely from Roman Catholic sources, but from Protestant as well, has been considerably augmented since he published his collections. Aside from the work of Taylor, I am unaware of a more significant addition than the present volume by the Rev. Mr. Wicksteed, representing lectures that were prepared for a characteristic English audience, and are now recast for publication in England and America.

Mr. Wicksteed is a Unitarian clergyman, a lecturer on various topics, and an accomplished one, if we may judge from his style in the present instance; a scholar who has previously rendered valuable service in translating the Latin works of Dante, and in commenting upon the *Divine Comedy.* As a final authority in the very exacting field of Dantesque interpretation and criticism he is hardly the equal of Dr. Moore or Dr. Toynbee, or of a few men of learning on the Continent. The method in his latest study will appear as we proceed. Here it may be noted that he has not troubled himself with an index, and that apart from his citations by chapter and verse from Aquinas and Dante, his references to sources and authorities are general. It would seem that he has not read Ozanam on *Dante and Catholic Philosophy in the Thirteenth Century*—one of the titles in Dr. Perrier's eighty-eight pages of Bibliography—which, though produced about sixty years ago, remains the most important work on the subject; nor is there evidence that he has consulted Delff's *Dante und seine Meister,* or Bisogno's *S. Bonaventura e Dante,* or the studies on this and related

topics by Carbonara. Such literature is easily found in Koch's *Catalogue of the Dante Collection* of Willard Fiske. Is this indispensable piece of apparatus not commonly used by students of Dante in England?

What Mr. Wicksteed has done may be briefly described, or gathered from scattered passages in his volume. In Chapters I, II, and III, he sketches the history of philosophy from the early Greek cosmologists to Aquinas, in so far as it may bear upon the ideas of Dante; by an adroit synthesis he makes the entire course of previous speculation find its meaning, and attain its end, in the poet. "On some of the ground" thus "rapidly traversed" the author is, as he says, "but a casual traveler," and frankly dependent "upon the secondary sources cited." These sources, though good, are not always the best. But the resulting chapters, on "Mediaeval Thought and Greek Philosophy," on "Neoplatonism and the Christian Neoplatonists," and on "The Migrations of Aristotle and the Transformations of Aristotelianism," are admirably suited to their purpose. They supply a background which is wanting in Ozanam, and in themselves would make the book worth while to students of Dante. The perspective is excellent, and the author's skill in rendering abstractions clear and entertaining is quite unusual. The remaining six chapters deal first with Aquinas, then with the general relations between him and Dante, then with the Scholastic and Dantesque psychology, and finally with the bearing of Aquinas on the *Inferno*, *Purgatorio*, and *Paradiso*. In Chapters VII and VIII emphasis is laid upon points in which the two men differ. In Chapter IX there is perhaps too much stress on the similarity in their conceptions of Heaven. Chapters III–IX are followed each by an appendix, containing for the most part well-chosen passages from Aquinas to illustrate and corroborate the utterances in the lectures. The volume closes with a "Postscript to Chapter VI" ("Psychology and the Doctrine of the Soul") on Aquinas and free will in God and man.

In the main part of his work, Mr. Wicksteed, who is well-versed in the writings of Dante, limits himself to the comparison with Aquinas suggested by his title, scarcely touching upon other thirteenth-century scholars, or upon the way in which their ideas are reflected in the *Divine Comedy*. He has read much, but not all, of Aquinas, who produced on an average one double-column folio volume of five hundred pages per annum during the two decades of his literary career; and he remarks:

"I am very far indeed from professing to have covered the whole

of this stupendous mass of work, but the continuous and careful study of thousands of pages of it and frequent consultations of the volumes [in actual number, twenty-five] up and down, during many years, have left me with the vivid impression that in the whole of this output the cutting edge of Thomas's mind is never to be found blunted. His whole material is always under command. Whatever he says on any subject he says in relation to his thought on every other subject. I may add that a few attempts at translation will be enough to teach any competent student to appreciate the condensed precision of the thought and the pregnant felicity of diction that characterize this great writer" (p. 96).

We subjoin one or two more 'impressions' respecting Aquinas:

"Both he and his master Albert are . . . clear in their assertion that on certain points Aristotle's teaching was erroneous and dangerous." Yet he found in the works of that author "an accepted method and canons of reasoning and investigation, and a cyclopedia of systematized science and philosophy" (p. 97). "Something has already been said of his never-dulled intellectual keenness. No less striking is his unflinching honesty. . . . Again and again we read with amazement his concise and forceful expression of objections, against which he perhaps has nothing equally clear and penetrating to urge. . . . He himself in later years confessed to a friend that he had never had a book in his hands, the contents of which he had not been able to master. And with him mastering a book meant bringing it into relation with everything that was already in his mind. . . . In later life, we learn, when he was dictating it was as if everything was in perfect form and order in his mind. He could dictate to three or four secretaries at once. . . . The certainty and firmness of his treatment of the vast variety of subjects with which he deals is not the result of elaborate tentatives and rearrangement. His advance follows the spontaneous swing of his mind, and he plants each point in its true place with unfailing precision. Like the blameless painter, he never makes a false stroke with his brush" (pp. 112–113).

Virtually all the characteristics we find in the great mediaeval scholar are evident in the poet. Dante's whole material also is always under command. Whatever he says in any part of his poem he says in relation to his thought in every other part of it. Upon a solid foundation of reason and good sense

> Uprose this poem of the earth and air,
> This mediæval miracle of song.

And he never makes a false stroke with his chisel. We may quote a few significant passages on Dante:

"The impression is often retained by more advanced students that Dante carries science and philosophy to the furthest limits which had been reached in his age. It is only after detailed study that we learn to appreciate the artistic tact and self-restraint with which he refrains from pushing his science, philosophy, or even theology, a step beyond the boundaries within which they can support his ethical, religious, and poetical purposes; and at the same time his boldness and independence in handling them, and the moulding ascendency of his own mind . . . He deliberately ignores, for the sake of simplicity and picturesque effect, the distinction between the constellations and the signs of the zodiac. . . . He used his science to give vividness and firmness to his pictorial presentation of the journey, carrying it just as far as he thought an educated man could follow without an appeal to books of reference, but no further. . . . And it is just the same with his theology, his philosophy, and his technical psychology. . . . But there is more than this. Dante not only knows where to stop himself, but he knows where science stops" (pp. 188–189).

The main point of agreement between Poet and Scholar lies in their mediaeval treatment of love:

"Very closely related to the scholastic and Dantesque psychology, including the doctrine of free will, is the conception of love in its widest range. Love is used in many senses, both by Dante and Aquinas. It sometimes stands for the whole range of cosmic forces. The inmost trend of the nature of anything, animate or inanimate, conscious or unconscious, is thought and spoken of as its love. Thus the stone loves the centre towards which it falls, the flame the circumference to which it ascends. All that we speak of as 'attraction' is included by the mediaeval writers, without any sense of strain or improper metaphor, in the term love. And it is perhaps significant that if we want a term that includes the falling of a stone and the yearning of the soul for goodness, beauty, and truth, we use the term 'attraction,' which is primarily a physical conception, but which we extend without sense of breach to the most abstract and spiritual relations; whereas the mediaeval mind fixed upon 'love,' primarily a spiritual conception, and imported it with no sense of discontinuity into the most elemental of physical phenomena." What we might call chemical attraction "Dante speaks of as the 'love of compound bodies for the place ordained for their generation, wherein they accrue, and whence they draw their vigor and power.' And so on, up through plant love, corresponding with the most elementary form of soul, or vital principle, the functions of which are confined to nutrition and

reproduction; the animal love which is connected with sense impressions and desires; and the human love for perfect and noble things—the instinctive attraction to beauty, goodness, and truth. When Dante speaks of love, it is generally this noble and specifically human love that he has in mind, but he also frequently recognizes it in its widest meaning. Love in the wider sense is the sole motive power of the universe, and therefore no conscious or unconscious being can be actuated by any other principle" (pp. 162–163).

In this last passage, the words, "he also frequently recognizes it in its widest meaning," are misleading; for divine love, the universal principle of things, the source of life and light and motion, is the dominating conception in the great poem from beginning to end; it is not by accident that the *Paradiso* begins with "The glory of Him who moves all things," and closes with "the Love which moves the sun and all the stars." Though Dante's subject matter be human conduct, the 'form' that is set upon that indigest is divine; he has not written a *Comédie Humaine*. To Dante, as Mr. Wicksteed well says of Aquinas,

"God . . . is the source and goal, the sustainer and inspirer of all that we feel and know of goodness." Further: "That Goodness derives all its meaning, power, and loveliness from some as yet imperfectly understood relation to Him, the full revelation of which will interpret, complete, and transfigure it. All men desire blessedness, and as we feel our way towards the true blessedness, whether by reason alone or aided by revelation, we feel more and more surely that blessedness is only to be found in communion with the central reality and primal cause that we call God. As we know more he is more and more felt as the all-concentrating object of love and desire. And what else is the *Summum Bonum* but the supreme object of enlightened and purified love and longing here, and love and fruition hereafter?"

This goodness supplies the motive of Dante's poetry even in the *Inferno:* "But to treat of the good which I there found, I will tell of the other things which there I marked." And it continues as the object of his search, and the soul of his poem, to the end of the *Paradiso*, where the ardor of his longing found its timeless satisfaction: "I mingled my looks with the Goodness that has no end."

Mr. Wicksteed is bent upon showing not only the similarities but also the differences between the men he is comparing; thus:

"Aquinas and Dante are at one in representing the damned as impenitent. The former repeatedly declares that they do not repent

of their sins, but only hate their punishment. But yet he frequently speaks of the 'worm' or 'gnawing' of conscience as a part of their torment. And this gives us the impression that he did not hold with so firm a grasp as Dante did the full consequences of their common principle that there has been no change in the sinner's sense of moral values. This is an essential feature of Dante's hell. The souls have just the same preferences that they had on earth. . . . They curse the parents who begat them, or the accomplices that seduced or betrayed them, never their own inherently evil choice, for they still cling to it." According to Aquinas, says his interpreter: "The punishment is imposed upon the sinner by the sentence of a court simply on the ground that he deserves to be punished." But the reader of Dante's Inferno "feels, vaguely at first perhaps, . . . that whereas others have said and say, 'By the justice of God the sinner gets what he *deserves*,' Dante sees exactly what the sinner *chose*, and conceives of the Divine Justice as giving him that." Again: "As Dante passes with Virgil by the morass in which the passionate are tearing each other, he sees bubbles rising and breaking upon the surface. His guide tells him that they rise from the throats of the sullen souls that lie in the mud at the bottom of the morass. They cry: 'Dismal we were in the sweet air, which the sun gladdens, nursing in our hearts the sullen fumes. Now we are dismal in this black mud.' That is what sulking is. It is a deliberate and sustained effort to shut out the light and air of human fellowship, friendship, affection, and comfort, and to nurse sullen fumes in the heart, in the hope that this conduct may hurt others. 'Dismal we were in the sweet air which the sun makes glad, nursing in our hearts the sullen fumes.' That is what the sulky chose. To be in hell they have only to get it." And again: "Dante's treatment illuminates the whole subject of evil choice, burning and freezing into our hearts the sense of the nature and meaning of sin itself; whereas Aquinas only insists on the awfulness of its consequences. But above all, Dante does not explain hell, though he informs it with a solemn meaning. Aquinas does not make it mean anything; but he explains it as included in the act by which God wills his own goodness."

His Unitarian sympathies, it may be, put Mr. Wicksteed out of humor with "the conception of an eternal hell shared alike by Aquinas and Dante"; and he protests "against the Christian Church having added to all the mysteries of the universe that we cannot escape the gratuitous horror of this dogma." Has he failed to observe that pagan, semi-pagan, and Christian poets alike, from Homer and Virgil

to Dante, and from Dante to Spenser and Milton, and so on down to Goethe—yes, even to Mr. Kipling, have found it a necessary conception in human poetry. It requires a severe imagination to conceive of a habit of choice so excellent as to be eternally good, and to invest it with eternal glory; the stern imagination of the greatest poets will not shrink from conceiving of a choice so vile and grotesque as to be eternally evil, and will clothe it in endless ridicule and horror, so long as human poetry endures. As for what Scartazzini in the first systematic treatment of the subject (1877) called *die Congruenz der Sünden und Strafen in Dante's Hölle*, it is often thought to be the most original idea in the *Divine Comedy*—according to the lay interpretation of originality. Yet we must bear in mind that the chief mark of genius is the ability to assimilate and organize ideas that every well-educated man discovers in his reading. Dante is chiefly original in abstracting for himself, from sources that to him were ultimate, the fundamental conceptions of humanity, and in combining what he has abstracted, according to universal laws.

Partly from a desire to make evident Dante's originality in the popular sense, partly because he has confined himself to one philosopher of the thirteenth century, our author runs the risk of attributing to Dantesque invention all the main differences he finds between the poet and Aquinas. In one case (p. 201), noted above, he implies that Dante is unlike Aquinas in not explaining hell "as included in the act by which God wills his own goodness." Is not the doctrine contained in the familiar inscription over the entrance to the woeful city? —"Justice moved my high Maker; my maker was the power of God, the supreme wisdom, and the primal love." In the face of that, how can one say, "But above all, Dante does not explain hell"? Again, Mr. Wicksteed observes that Dante differs from Aquinas in conceiving of "first matter" as created not "under a number of different forms," but "as a pure potentiality." Here, of course, Dante, if he departs from the teaching of the Dominican school, is not altogether idiosyncratic, but approaches the conception held by the opposite, Franciscan school, represented in the *Divine Comedy* by Bonaventura. Thus Delff, who runs to his own extreme, and wishes to prove that the philosophy of the Divine Comedy is derived from Bonaventura, and not from Aquinas, points out that Bonaventura identifies matter and potentiality. The entire problem of the resemblances between Dante and the Doctor Seraphicus is ignored by Mr. Wicksteed. Nothing is said of the fact that Dante's division of sins, which is different from that of Aquinas, is parallel to that of Bonaventura. Nothing is

said of the greater suitability of the more popular philosophy to the comprehension of the ordinary reader, and hence to the function of the Divine Comedy. Aquinas wrote rather for the learned. And nothing is said of the point which Ozanam and others have dwelt upon, that the mystical spirit of Bonaventura is on the whole closer than the ratiocinations of Aquinas to the soaring vision of the most high poet.

But to the vexing question whether the Dominican or the Franciscan school worked more powerfully upon the mind of Dante it is hard to give a positive answer. Possibly one may say that, on the whole, the writings of Aquinas serve better to illustrate the earlier parts of the *Divine Comedy*, except with reference to the division of sins, and the works of Bonaventura, especially the *Itinerarium Mentis ad Deum*, throw more light upon the *Paradiso*. Yet the two philosophers constitute but a segment of the great orb of Dante's learning. The Doctor Angelicus and Doctor Seraphicus, with Albertus Magnus as a third lover of wisdom, are placed by Dante in the Heaven of the Sun, among the spirits of eminent theologians; they are highly important in his estimation, but they are not his ultimate guides. It is Bernard who finally leads him to the contemplation of the Divine Essence. Dante's own attitude to the opposing schools may perhaps be inferred from the way in which he introduces their leaders and their founders. He makes the leader of each recount the life of the founder of the other. Aquinas, having mentioned eleven of his companions, including Albert, Solomon, and Boethius, after a pause goes on to tell the story of Saint Francis; then Bonaventura, having related the life of Saint Dominic, proceeds to name himself and eleven other spirits with him, including Hugh of St. Victor, Petrus Comestor, and Chrysostom.

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Esquisse d'une interprétation du monde. Par ALFRED FOUILLÉE. Paris, Félix Alcan, 1913.—pp. lxvi, 417.

At the end of a long and prolific life of thought, Fouillée left a note under the date of March, 1911, containing these words: "Restent à publier: 1, L'Esquisse d'une interprétation du monde, dont les principales parties sont achevées; 2, Les Équivalents philosophiques de la religion." The present volume contains the first of these works in fairly finished form, together with fragments of the second and various metaphysical notes in an appendix. The editing is well done, and the work as a whole is a significant contribution to metaphysics.

It is more than a unification of the various familiar phases of the author's thought; it is a serious effort to deal anew with the cosmological problem, with the Kantian criticism as a background, and with contemporary movements in philosophy vividly in mind. A reminiscent note is occasionally apparent throughout the volume: the author is interested in vindicating his place as a prophet of the metaphysics of experience prior to contemporary intuitionism, and of the working-power of ideas before Nietzsche and the pragmatists, though on sounder principles in each case.

In an introduction, dealing with "La tâche actuelle de la philosophie," there is a vigorous criticism of intuition as a philosophic method. Defining intuition strictly as the adequate perception of reality, *i. e.*, the perception of a thing as it would perceive itself were it fully self-conscious, Fouillée maintains that there is no available metaphysical intuition, whether of matter or of other minds or of one's own mind, still less of the absolute being. Intuition can be used in metaphysics only in the sense referred to in the seventh letter of Plato, as the taking fire of material amassed by long empirical labor, a rapid imaginative synthesis under the influence of a directive idea. But this process is simply inspired induction; its results are reported for the most part in figures, analogies; it achieves a similitude of reality, not a perception, *i. e.* a relation rather than a term; it obtains no knowledge of the absolute, which must stand at the end of the conceptual labor of philosophy, not at the beginning.

Here we come upon Fouillée's fundamental conviction, the complete intelligibility of the world. This does not mean for him that everything is intellectual in its nature: activity is always more or less blind, sensibility more or less dull, adaptation more or less instinctive. But it means that there is nothing in the world which has not its own sufficient reason, and nothing which harbors inconsistency in its nature. Nothing stands apart from the laws of identity and causality; and the task of philosophy, like that of science, "is to put more and more into evidence the profound rationality of things."

At the same time, Fouillée does not hesitate to draw the categories of knowledge from the will; for the will itself is but a development of the fundamental impulse of life, the impulse to become completely conscious, "la volonté de conscience." To be conscious and at the same time fully self-conscious is joy itself, the essence of value. The categories are "generalized abstracts of ourselves"; the primary category, that of causation, is but the translation of the will (p. 154) —*i. e.*, it is the structure of the will assumed as the structure of the

world. And thought may be defined as the process of mastering the world by assimilating it to the self through the categories. Concepts and categories may thus be described with Nietzsche as means of power. But this does not in the least imply the subjectivity of knowledge, nor its pragmatic character. Knowledge succeeds only because these principles are in fact the laws both of the self and of the world. The mind is a product of the world, and this conformity is as much to be presumed as for example the conformity of the function of locomotion in us with the objective laws of physical movement.

On these principles, the author is prepared to defend determinism against the later apostles of contingence, among whom he numbers Charles Peirce with Lotze and Renouvier. True, our conceptions of mechanical determinism are misleading and inadequate; but only because they ignore the deeper determinants of all happening. Every event is the result of an infinitude of causes, and some of these, the ultimate factors, are intellectual and moral. In our own behavior determination may become less mechanical and more spiritual, and as it does so, its form tends to that of an ideal spontaneity. In this sense, contingence may be taken as a limiting idea, and also as an *idée-force* which incites us to act as if there were no law and no obstacle that could not be set aside,—in the interest not of hazard, but of intelligible living.

And no limit can be set to the perfectibility of the spiritual order; nor can the theories of the finitude of the universe or of the entropic decline of available energy put a term to it. At the worst we have to expect an asymptotic approach to physical equilibrium which is wholly compatible with infinitely continued mental development.

I have touched only upon the more salient positive views expressed in these pages. There is much acute criticism in the chapters dealing with various interpretations of the world held to be insufficient: the interpretations by extension, by "la durée," by movement, by energy, and by certain conceptions of evolution.

WILLIAM ERNEST HOCKING.

The Belief in Immortality and the Worship of the Dead. Volume I. The beliefs among the aborigines of Australia, The Torres Straits Islands, New Guinea, and Melanesia. By J. G. FRAZER. The Gifford Lectures, St. Andrews, 1911–1912. London, 1913, Macmillan and Co., $3.50.—pp. xxi + 495.

The volumes, of which this is the first, promise to be the most exhaustive study yet made of the customs and beliefs of primitive

races concerning death and the belief in the continued existence of the spirit after death.

Dr. Frazer's three introductory lectures defining the method of the inquiry, savage conceptions of death in general, and the myths of the origin of death are particularly interesting. The seventeen lectures which follow describe in detail the beliefs and customs regarding death held by the peoples mentioned in the sub-title. The mass of details here presented is bewildering and little is suggested in the way of interpretation. These details, however, are presented in Dr. Frazer's usual charming style and the reading of the book is not an arduous task.

The author especially disclaims any purpose to judge of the truth or falsity of the belief in immortality. His inquiry is rather an historical one. He starts with the assumption of natural theology that if there is a belief in a deity or deities it has been derived from some phase of empirical experience. This belief he traces in the main to certain phases of subjective experience which have suggested to men of all ages the idea that one may be inspired or possessed by spirits or other agencies higher than oneself. This theory leads first of all to the worship of living men as 'possessed' and finally to the notion of deities. Outer experience also contributes to the development of religious beliefs by the interest of the mind in the discovery of the causes of natural phenomena, the savage explaining them all in terms of voluntary agents like himself.

To the above two types of deistic ideas must be added a third type, that of the spirits of deified dead men. Not merely among savages and barbarous people but also among the civilized, the worship of the human dead has been one of the commonest forms as well as one of the most influential of all religious practices. In fact the belief in the survival of the human spirit after death is world-wide; "we need not wonder therefore that the custom of propitiating ghosts or souls of the departed should be world-wide also."

The fundamental aspect of the deification of spirits of the dead is this assumption of the continued existence of the soul after death. Dr. Frazer's study is a contribution to the investigation of this assumption through the description of its various modes of expression in primitive culture.

Of the various sources of the belief, he places dreams first of all, dreams on the part of the living of those who have died. He, however, recognizes the likelihood of other co-operating causes. The amount of attention attracted by death is sufficient to account for the vast

amount of primitive belief and ceremonial centering about this incident, and practically all people hold some sort of belief in a longer or shorter existence of the spirit after death. Another belief, almost as general among savages, is that death is never natural but almost always due to the maleficent acts of some sorcerer, evil spirit, or ghost. A part of the reverence for the dead is doubtless due to a deep-seated fear of their malevolence.

The belief in the life after death is, then, but the logical outcome of the belief that man is naturally immortal and that all deaths are unnatural. The many ingenious explanations of the savage as to how death entered into the world, recounted in this book, suggest, as the author says, a curious parallel in some of the speculations of modern science, a number of eminent men having expressed the view along with the savage, that death is not a natural necessity.

In the lectures which follow, the association of the beliefs of these different savage races with the other conditions of their life, especially their natural and economic environment, is made fairly definite and, probably, with the information available, it is done as well as possible. As the author does not himself attempt any summary or interpretation of the various beliefs, the reviewer can hardly attempt it. He wishes to suggest, however, that many of the ceremonials associated with the dead suggest as their basis various practical expedients or precautions taken by the primitive man to guard himself from the malevolent power which he had attributed to the deceased. This is but one phase of the belief in a mysterious potency pervading nature, and it may in various ways have been easy for the savage to associate it in his mind with the dead.

It is conceivable that, elaborate and useful as this account of savage beliefs is, it fails to furnish certain facts which may in a measure be essential to the proper interpretation of these beliefs, namely, the facts of social organization and the general system of beliefs and practices of these peoples. No doubt Dr. Frazer has given all of this material that it was feasible to give in such space as he had. However, we should bear in mind that no set of beliefs can be studied adequately when taken thus largely by themselves. The beliefs regarding death are but part of a much larger circle of ideas and social structures, and they must always be interpreted with this social matrix in mind. This is not a criticism upon Dr. Frazer, however, for, as we have said, he does not attempt any interpretations.

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The Philosophy of the Present in Germany. By Oswald Külpe. Translated from the Fifth German Edition by Maud Lyall Patrick and G. T. W. Patrick. New York, The Macmillan Co., 1913.—pp. vii + 256.

Those who have read Külpe's *Outlines of Psychology* and his *Introduction to Philosophy* will be glad to know that another work of his has been translated into English. *The Philosophy of the Present in Germany* is an account of four of the modern tendencies of thought in Germany, those which Külpe regards as most representative of the movements of the present. It is not a "detailed study of aesthetical, logical, ethical, or psychological problems," but rather an attempt to present a "general world-view" and to make clear "the attitude of the several thinkers on the problem of knowledge." The tendencies taken up are those of Positivism, Materialism, Naturalism and Idealism, and the thinkers discussed are treated as types of these tendencies. The general world-view of these thinkers is not merely expounded but it is also criticized, and it is largely in the criticism that the value of the work lies.

Mach and Dühring are taken as types of positivists. The main criticism of Positivism is a good example of the sort of criticism offered. Külpe says Positivism is too limited and too insecure in basing everything on the given in consciousness. "If in the Absolute Philosophy the centre of gravity was found in the activity of pure thought, Positivism shifts the centre of gravity to the reality given in our consciousness. In this limitation and depreciation of thought Positivism betrays its deepest impulse, its most characteristic position. . . . Positivism, therefore, is a standpoint of revision—an inventory, as it were, which precedes new enterprises and loads them in advance with a heavy ballast of critical foresight and caution. In order to do this work thoroughly, it opposes not only the all-too-many answers, but also the all-too-many questions. It is not content with representing the present metaphysical solutions of the world-riddle as untenable, unsafe and superfluous guesses, but it wishes also to suppress the very impulse toward such speculation. . . . But in so doing, Positivism itself falls into a kind of dogmatism, since it starts with certainty instead of establishing it, and fixes in advance the goal of thought at the same time as the method" (pp. 76–7).

For Materialism he takes Haeckel as the type and for Naturalism Nietzsche. Under Idealism he gives us four thinkers as types, Fechner, Lotze, von Hartmann and Wundt.

His remarks on Wundt are especially interesting. For Wundt, he says, "experience and the laws of rational thought are the only

guiding stars, the only foundation, and the only aids to investigation. Experience supplies the facts, the empirical sciences, the provisional results of a systematic examination of these facts, and metaphysics starts from these results in order to carry them further and perfect them from a logical point of view" (pp. 210–11). There are no "fantastic analogies," Wundt's metaphysics has a scientific foundation. He likens him to Leibniz, "for to him as to the earlier philosopher no human knowledge is foreign, and he, like Leibniz, strives after a theory of the world which shall give full weight to the claims of both the formal and the real sciences. Wundt also arrives at a monado-logical system, although, to be sure, he substitutes units of will for units of perception, and has changed a scale of monads quietly resting side by side into an actual community and reciprocal determination of creative beings" (p. 221). But there is a serious difficulty with his idealism. Idealism uses the mind "as the key with which to unlock the world-secret." Wundt believes that the will expresses the being of the mind most exactly, and that the world is therefore a system of "will-units." Külpe feels that the will should not be regarded as more fundamental than any other element in the mind; the other elements cannot be reduced to the will, and they go just as much toward making up the mind as the will does. Therefore there is no reason for selecting the will as the key to the universe.

One might have preferred a different selection of the leading tendencies of thought and of the thinkers representing each tendency. To "avoid all controversy" on this subject Külpe "claims the right of personal opinion" (p. 8). But I think it may be said that given the tendencies and the thinkers and considering the limited space allowed to each thinker the exposition gives us the essentials. The criticism is always serious but clear and thoroughly sound. The translation is so good that one is not aware of reading the work in translation.

As the translators point out in the preface, Külpe has reserved the term 'Idealism' for objective or ontological idealism and excluded it from including epistemological idealism. It certainly makes for clearness to keep this term for one type of idealism, but it is very misleading to class epistemological idealism as a form of positivism. Epistemological idealism may approach positivism and it may be very far from it. Such thinkers as Lange, Cohen and Natorp do find the epistemological problem in experience as does Mach, but their method is about as far removed from that of Mach as can be imagined. On pp. 247–8 Külpe hints at this difference, but he does not carry it out.

HARVARD UNIVERSITY. M. PHILLIPS MASON.

NOTICES OF NEW BOOKS.

Intelligenz und Wille. Von Dr. E. MEUMANN. Zweite umgearbeitete u. vermehrte Auflage. Leipzig, Quelle und Meyer, 1913.—pp. viii, 361.

The second edition of this book shows no very important changes from the first. The two longest additions contain, the one a fuller and more explicit rejection of the doctrine that feelings have primary importance for the will, the other a discussion of the various cases where volition fails to be carried out, and of the relation between general and special volitions. The chief importance of the book, in the second as in the first edition, is as a contribution to individual psychology.

The first section deals with intelligence, defining it as the capacity to think or judge, and discusses the formal conditions of intelligence, the types of intelligence based on characteristic differences in attention type, and the relation of intelligence to observation, memory, and imagination. The relation of imagination to thought is of course a point needing especially careful elucidation. In thought, Meumann holds, the imageable or *anschaulich* elements are only means to an end: in imagination they are ends in themselves. Thought involves a search for relations. Both thought and imagination recombine ideas, but the former produces new relation-complexes, the latter new content-complexes. By thought we form concepts, which cannot be represented as images. Since, however, they must have *feste Anhaltspunkte*, we have need of words, gestures, and other symbols for thought: hence thought is essentially a symbolizing activity, while imagination is not. Both thought and imagination are ruled by *Aufgaben* or directing ideas, but these are of different sorts in the two cases. At this point in the exposition, the introduction in the second edition of a criticism of Ach's views on the nature of thought seems to involve the author in what is at least an obscurity, if it is not a contradiction. On one page he says of the Aufgabe and its accompaniments, "Alles das fehlt bei dem rein erinnerenden Vorstellen," as contrasted with imagination and thought. On the next page, in the new section, he criticises Ach as follows: " Das Aufgabebewusstsein, die 'determinierende Tendenz,' die Selektion der Vorstellungen unter dem Einfluss der Aufgabe u. a. m. sind gar keine dem Denken und Urteilen allein eigentlichen Vorgängen: sie kommen auch bei reinen Gedächtnisakten vor"; in which statement, rather than in the first, he is of course correct.

The second section, on the will, defends the following principal positions. The essential features of a truly voluntary act consist in an inner assent to its motives, and the consciousness that this inner assent is the real cause of the action. The movement idea is not of prime importance to the voluntary act. Of the several arguments which Meumann urges against such a supposition, the following are the most important. First, the movement idea cannot be

concerned in inner volitions; second, children perform voluntary movements before they are capable of reproducing ideas; thirdly, movement ideas are very difficult to get, kinaesthetic complexes not being readily reproducible. The author grants, however, that movement ideas serve for the regulation of new movements, although not for their production. Precisely this function of regulation, we may note, is too important to be so cavalierly treated. It may also be said in criticism of the author's position, that the difficulty of calling into consciousness a kinaesthetic idea whose components can all be identified and localized does not disprove the functioning of kinaesthetic ideas in governing movements, any more than the difficulty of representing concepts under the form of images needs to prevent Meumann from admitting their function in thought.

Ach's theory of the will the author would accept if to the operation of determining tendencies as causes of volition there is added the 'inner consent.' Meumann's decided minimizing of the influence of feelings on the will seems to be connected with his narrow conception of feeling as mere pleasantness-unpleasantness. There are three kinds of will-acts, he says, where feeling certainly plays no part: habitual acts, compulsory acts, and acts proceeding from deliberation and intellectual conviction of the value of an end. Many psychologists, however, would broaden the term feeling to include precisely the various values which may attach to ends, and would urge that in habitual and compulsory actions the feeling element is still present, although its source is no longer the idea of the end.

The carrying out of volition into action Meumann believes to rest upon a purely associative process. The volition produces the act because motive and act have been previously associated. This association, of which a motor process is the second term, is in no way different from an association in the ordinary sense: "we have no reason to assume that the association of sensory and motor innervation processes is based on other conditions than those of sensory and sensory or of motor and motor processes." The most important cause of failure to carry out volition into action is thus any imperfection in the associative connection between the two, due for instance to lack of practice or lack of definiteness in the idea of the end.

The chapter on "Individual Forms of Will and Character" is one of the most valuable in the book. Of pure will-forms, the author contrasts the following pairs: the energetic and the non-energetic; the enduring and the fatigable; the systematic (governed by general purposes) and the atomistic; the will having clearly realized ends and the more impulsive or instinctive will; the static (needing only one resolution) and the dynamic (needing repeated resolutions); the hesitating and the promptly decisive; the type with a strong habit-forming tendency and that with less inclination to remain in habitual grooves. Under the head of 'feeling forms of will,' a new classification of temperaments is given, on the basis of the quality, intensity, and duration of feelings, the speed and facility of the affective response, and the active or passive character of the pleasantness or unpleasantness involved. Finally, the

'intelligence forms of will' are enumerated as the type guided by imagination, that guided by thought; the productive, unproductive, and reproductive types of will, the independent and dependent wills, the analytic and synthetic wills.

In the last chapter, on the relation between intelligence and will, the primacy of the former is maintained. The second edition has added a criticism of Wundt for inconsistently having abandoned the doctrine of a unique will-element in his psychology, while continuing to uphold a voluntaristic metaphysics. The question as to the proper relation of intellectual and volitional elements in determining one's metaphysical attitude is answered by a strong, and to the reviewer welcome, plea against irrationalism.

It seems ungrateful to wish that a book which in its sane and practical discussions of the individual aspects of intelligence and will performs so useful a task, based this achievement on a yet deeper theoretical foundation. But one wants further light upon the nature of that 'inner assent' which is the essential feature of will; one wants to know more about the psychological character and physiological basis of those 'relations' and 'concepts' which are the peculiar material of thought processes. On the last page of the book we are told that the inner assent may be the revelation of 'an elementary active reaction of the self.' If it is to be explained by such categories, then they should be used throughout in place of psychophysical explanations. But we find that elsewhere in the book the relation of motive to act is referred to the working of the laws of association, that is, to psychophysical causes. The reviewer greatly wishes that Meumann had at least indicated the direction in which one may look for a purely psychophysical explanation of the essential features of will.

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Natural Law in Science and Philosophy. By ÉMILE BOUTROUX. Authorized Translation by FRED ROTHWELL. New York, The Macmillan Company, 1914.—pp. 218.

This is a series of lectures delivered at the Sorbonne in 1892–3, to the English translation of which Professor Boutroux has added a brief preface. The logical, mathematical, mechanical, physical, chemical, biological, psychological, and sociological laws are critically examined in successive chapters, and shown to be irreducible to common principles at present, and to deviate further and further from strict logical necessity. Determinism as a philosophical principle seems to be identified in Professor Boutroux's mind with logical necessity of a type that cannot be attained in formal logic itself, since even this contains elements that cannot be reduced to pure thought. With such a conception of determinism assured, it is easy for Professor Boutroux to show that in the present development of the sciences its postulation is a sheer assumption. He concludes, "that which we call the laws of nature is the sum total of the methods we have discovered for adapting things to the mind, and subjecting them to be moulded by the will" (p. 217). "The mechanical laws of nature, revealed by modern science, form in reality the chain that binds the without to the within. Instead of being a necessity, they set us free" . . . (p. 218).

Much as one may agree with Professor Boutroux's conclusions, it is to be feared that they are reached too easily to convince any of our naturalistic and mechanistic philosophers at the present time. It needs to be shown that no other form of determinism except that of logical necessity could be deduced from natural laws. This translation will furnish an excellent introductory treatise to the problems of mechanism and teleology; there is little in it, however, that has not been stated in a more thorough, though perhaps a more technical way, in recent works in English upon the subject. The translation seems on the whole to be accurate, and carefully done; possibly the influence of French rather than English diction is apparent in a few passages.

WILLIAM K. WRIGHT.

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Le rhythme du progrès. Étude sociologique. Par LOUIS WEBER. Paris, 1913—in 8°, de la Bibliothèque de philosophie contemporaine, Alcan.—pp. xiv, 311.

This work, following closely upon Lévy Bruhl's *Les Fonctions mentales dans les sociétés inférieures* and Durkheim's *Les formes élémentaires de la vie religieuse*, shows the productive activity of the new French sociological school, and, like the works mentioned, sets forth doctrines in the fields of comparative morals, the psychology of religion, and logic, which deserve serious consideration.

In the place of Comte's law of the three stages, which is shown to be inaccurate in its interpretation of historical progress, M. Weber proposes a rhythmic law of progress in two stages,—the first a stage of technical activity, and the second one of reflection and speculation. Evidence that civilization passes alternately through these two stages is offered from animal psychology, anthropology, and the history of the sciences. Perception, really a phase of action, appears earlier in evolution than reflective thought. Humble work, with simple tools like the coup de poing and the arrow-head, preceded the rise of systems of ideas, such as those of religion and magic. Language was the first form of theoretical technique to appear, and words and gestures may be regarded as tools invented for practical control, which at first were believed to be quasi-material objects with physical efficiency. The efficiency of words suggested a new sort of causality, and so gave rise to religion and magic. From the latter developed social institutions in general. Technical activities have their basis in individual psychology, and develop in immediate contact with the physical environment. Social, religious, magical, and other speculative ideas, on the other hand, have no external mode of verification, and owe their objectivity to collective representations and other phases of group life. M. Weber follows Durkheim and Mauss in attributing generalized concepts and categories of all sorts to social life.

That an earlier stage of technical invention has been superseded by a later era of religio-magical speculation is evident in the case of the native races of Australia and Oceanica. The evidence points to such a transition in pre-

historic Europe at about the end of the palaeolithic or beginning of the neolithic period. Later another such transition from practical to speculative activity is evidenced by Egyptian, Phoenician and Greek traditions regarding the discoveries of the technical arts possessed by them in the ancient period. The history of the sciences—mathematics, astronomy, physics, chemistry—illustrates the principle that theoretical development follows and depends upon practical technique, and that without the latter ideas become arrested in a sterile verbalism. So the rhythm of progress is an alternation of technical and theoretical eras, the former both chronologically and logically preceding the latter.

M. Weber's general argument seems convincing. His emphasis upon the precedence of action to ideation, and the empirical evidence which he furnishes ought to make him a welcome ally to our instrumentalists. In criticism it might be said that he makes too sharp a dualism between theory and practice and does not allow enough for their mutual interdependence. He does not sufficiently recognize that scientific categories, like cause and effect, genus and species, and the others, owe much to collective representations and social life in general—a fact which Professor Durkheim has shown. But these are merely faults in emphasis for the most part. The book contains numerous valuable points, but is hardly equal in suggestiveness and originality to the works of Durkheim and Lévy-Bruhl to which reference has been made.

WILLIAM K. WRIGHT.

CORNELL UNIVERSITY.

The Unconscious. By MORTON PRINCE. New York, The Macmillan Co., 1914,—pp. xii + 549.

A subject, at which the author has many times tried his hand and on which, especially among pathologists, his authority is readily conceded and respected, comes again to our notice in a neat volume of some size and readability. It is in no wise a systematic treatise and can be read profitably only as a sequence of lectures on subjects which stand related in the field of the author's interest. After a perusal of the subject-matter, however, the impression is left that the title of the work might more appropriately have been *The Subconscious*, much as the word has been abused and maligned, because the *unconscious* gets but a small share of consideration and is much the less comprehensive topic under discussion. Since, perhaps, the author finds in the *unconscious* one of the distinguishing characteristics of his theory, he may have discovered a sanction for its prominence in the title.

After a preface whose main emphasis lies in the insistence on strictly inductive and experimental approaches to scientific phenomena, and the justification of theoretical assumptions based upon these approaches,we are led to a consideration of memory, a subject which is taken up from various points of view in the first five sections. Memory is a process involving both conscious and subconscious factors and occasionally being itself wholly subconscious in nature, but always representing the registrational and conservational tendency in the

life of the organism to the end that nothing that is ever experienced is ever entirely forgotten or lost. Its bearing on the maintenance of personality, on the formation of judgments, beliefs, dreams, and hypnotic and psychopathological phenomena is indicated. A number of illustrations of the recall of past and apparently forgotten experiences in normal life under the influence of automatic writing, abstraction, hallucination, and dreams are cited. Examples of the conservation of experiences which were not focal in attention at the time, of objects not consciously experienced, of forgotten traumatic and somnambulistic events, are also added. The facts of dissociation of personal experiences, of post-hypnotic suggestion, and other instances of conservation are gathered from 'artificial' or 'abnormal states.' The next section discusses in detail the residual processes which underlie automatic writing, hallucinations, dreams, and bodily disturbances, differentiates the factor of recall from the principle of simple retention, and prepares the way for an exposition of hypothetical *neurograms* which are the physiological correlates of psychical phenomena. After various psychical, physical, and physiological theories of conservation are considered, the neurogram theory is proposed as the one which is the most plausible explanation of the registration, conservation, and reproduction of experiences. Neurograms are, then, postulated 'brain-records,' 'modifications of the dispositions of the neurons that remain as vestiges of thought' (p. 133), 'unconscious physiological arrangements' (p. 137). The sixth lecture begins the *Leitmotiv* of the book: the subconscious process, which is defined 'as one of which the personality is unaware, which, therefore, is outside the personal consciousness, and which is a factor in the determination of conscious and bodily phenomena, or produces effects analogous to those which might be directly or indirectly induced by consciousness' (p. 156). There is evidence that these subconscious processes are often "of an intelligent, purposeful, volitional character" (p. 191), as is illustrated in automatically written verse. Frequently a problem which vexed consciousness gets itself carried out and solved in the subconscious manifestation of hallucinations and dreams. At this point counter arguments are offered against the Freudian analyses of dreams, emphasizing the importance of selecting the proper 'causal factors', with the resulting conclusion that "a dream may be the symbolical expression of almost any thought to which strong emotional tones with their impulsive forces have been linked . . ." (p. 221). The author recurs to this thesis against the school in another context (p. 513). The eighth chapter bears the title of the book, *the unconscious*, called "the storehouse of neurographic dispositions or residua" (p. 229), and later interpreted as 'memories' (p. 238). Here the author begins a defense of the term 'intelligence' as used in connection with unconscious processes as well as with unconscious motives. Part of the argument is crowded into a long footnote (p. 240, *v.* also p. 245). After a brief historical review of the use and meaning of the term 'subconscious,' we are asked to consider a classification (p. 253) which includes in the *coconscious*, marginally unclear processes, split-off constellations or ideas, and in the *unconscious*, both dormant and actively

functioning neurograms or neural dispositions and processes. The chapter on unconscious complexes considers in detail, obsessions, emotional memories, instinctive integrations, ideas of interest, artificial organizations, such as post-hypnotic and therapeutic suggestions, and moods. The tenth section makes the unconscious the seat of perceptions and of meanings for ideas, with the reservation that the difference between a perception and a meaning is the higher degree of complexity of the latter. Other phases of the problem, degrees of attention in consciousness, description of four types of obsessions and phobias in the light of subconscious and neural dispositions, occupy the next three lectures. The fourteenth and fifteenth lectures discuss the physiological effects and psychological processes of emotion, with special emphasis on emotional conflicts occurring in the subconscious. The next lecture brings together the results of this conflict under the headings of contraction and dissociation of consciousness and amnesia. The last section of the book coördinates the facts and theories of the previous lectures in summary and conclusion.

It is not easy to criticize a subject and presentation to which the author has evidently devoted much time and thought. Four years ago, it will be remembered, he and five other psychologists and psychopathologists contributed to a symposium on the general subject of the subconscious. The present work is naturally much more comprehensive in scope and on a higher scientific level than the author's contribution to this symposium, but, in the reviewer's mind, Münsterberg's chief criticisms passed at the time on the theory of the subconscious, and the late Professor Pierce's "Appeal from the Prevailing Doctrine of a Detached Subconsciousness," published four years earlier (Garman Commemorative Volume, 1906) still leave little to be added in the way of adverse comment. The first reaction which occurs expresses itself in the opinion that the theory is unnecessary. What does the theory really mean? Surely, little else save that there are unconscious activities and tendencies which may show special organization. Will not the physiologist admit that the neurological functions are organized? Why not relegate these phenomena to his field of study, to the physiological substrate of the organism. To say that these activities show a submerged intelligence is a distortion of the concept of intelligence (*v.* p. 245). Nowhere in the discussion is there any evidence that there is any anticipation of result of action involved. The action specified looks to be as intelligent as the symmetrical formations of crystalline substances. A second criticism takes the form of a remonstrance against the ambiguous or wide usage of technical terms. The transfer of such concepts as idea, memory, perception, from the realm of conscious experience to the sphere of physiological, neurological, and subconscious activities utterly destroys their meaning. If these words are to be rightly interpreted their use must be restricted to the proper contexts, else a washout left by a flood, or the puncture left by the passage of an electric current through a dielectric may become a 'memory.' We have noticed that 'memory' is made physiological as well as psychological (p. 4). This means that a new term will have to be invented to describe the conscious experience of memory imagery or an

ambiguity must be tolerated. The whole issue of the conscious and physiological aspects of the organism is left unsettled by the statement that the author holds to a 'psychic monism' (*v.* pp. 148 and pp. 246*f.*). When in the same paragraph, and not many sentences apart, neurograms are described at once as concepts and as records of our mental lives, when the subconscious becomes '*the* problem of psychology' (p. viii), one wonders what the status of the 'mental life' can really be. Further confusions of this order occur when the term 'unconscious' is made to include both the unclearly conscious and the physiological or unconscious (pp. 250–2), and when a distinction is forced between the *psychological*, which "pertains to the empirical data of consciousness," and the *psychical*, which "pertains to the inner or ultimate nature of these data" (p. 244).

In short, although the author has made brave attempts to show by argument and by analogy—which appear to be the 'inductive method' promised in the preface—the necessary existence of the subconscious and the unconscious, nevertheless, it seems that again refuge has been sought in a name: certainly the subconscious, as such, has not been observed or experimentally controlled. In the preface the author admits that it is a theory, but so are the subconscious ideas, neurograms, memories, perceptions; the only facts are the pathological cases which are so fully and frequently described and the experiences from normal life which are cited. If the book proposed merely the substitution of a set of terms—they had better not been borrowed terms—for a variety of physiological activities and theoretical conditions, this criticism would not apply, but the attitude adopted after the preface seems to be one of established scientific fact, not one of terminological substitution. What proof there is for the existence of subconscious ideas, perceptions, memories, and the like, is not very clear, since obviously the direct experience of the person does not reveal them. If they are theoretical, then they seem unnecessary and empty of meaning, because clearly the analogy with conscious experiences is unreal, since they are not conscious and therefore not experiences.

CHRISTIAN A. RUCKMICH.

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Essays. By RAOUL RICHTER. Leipzig, Felix Meiner, 1913.—pp. xiii, 416.

This volume is edited by the widow of the Jena professor, and consists of a rather miscellaneous collection of addresses and articles, from a student essay on the Faust problem to his last public address, on academic ideals. Single essays appear on Pascal, Spinoza, Kant and Schiller, Wagner, Woltman, Dehmel, and on the relation of philosophy and religion; but a third of the volume is occupied by five articles on Nietzsche, and this more connected part of the book is here selected for brief comment.

Richter is a warm admirer of Nietzsche, though by no means a devotee, and gives a successful popular presentation of his chief doctrines, in a clear and pleasing style. His criticisms do not seem to go deep enough; but the intent of the studies is chiefly appreciative.

Richter considers that Nietzsche's importance lies in having compelled a considerable reformation in our understanding of what is essential to religion, in having forced new attention to the doctrine that the moral personality must be autonomous, in having broadened our humanitarian ideals, and in having been himself the embodiment of a new and future type of profoundly religious man. If the essence of religion is the emotional acceptation of what one considers the deepest nature of the real, then Nietzsche may stand as an example of religious zeal in his cult of life and force.

In his teaching concerning the superman Nietzsche's concept underwent considerable change, and Richter argues, with some detail of quotation, that in its biological and historical aspects the later form of it is in clear contradiction to the earlier. The earliest doctrine is based on a complete acceptance of Darwinism, and holds that, just as there has been continual progress in the evolutionary series leading up to man, so there must be progress from present man to a still higher future race. In the next periods Nietzsche introduces the idea of the eternal cycle, shifts away from the the belief that present man is really a biological culmination, and begins to drop the idea that there can be produced a whole race of beings who shall be higher than the highest who have already lived. The final doctrine is the denial of progress by natural selection, the complete abandonment of the hope of a new biological species in a far distant future, the belief that the superhuman type has already often appeared, and the belief that our aim should be simply such intelligent, selective breeding among the present mixed and degenerate races of men as to produce dominating individuals more frequently.

Discussing Nietzsche's views on women, marriage, and children, Richter gives some account of what is known of Nietzsche's own relations with women, noting his antipathy to any libertine practise, and his apparently abnormal lack of sex-instinct intensity. Admitting the exaggeration and the self-contradictions in his comments on women and the right relations between the sexes, Richter urges that Nietzsche's forward-looking ideals, and his war on mere sentimentalism in social problems, have in fact strongly aided the advance of a broad humanity.

C. H. TOLL.

AMHERST COLLEGE.

Das Realitätsproblem. Von MAX FRISCHEISEN-KÖHLER. Berlin, Reuther & Reichard, 1912.—pp. 98.

This work is a compact restatement of the main position taken in the author's earlier work, *Wissenschaft und Wirklichkeit* (Leipzig, 1912). While many details of the earlier work are here omitted, the author has profited by criticism and discussion; the argument is presented with greater clearness, and the references to differing positions are illuminating.

The author rejects logical idealism (Lotze) and psychological idealism (Berkeley, Mill) as unable to give any meaning to 'real existence.' The former throws existence as a merely logical predicate into a system of thought

relations, a system that cannot be characterized as existent in any way that distinguishes it from any other possible system. The latter, while it grounds reality in concrete sensations, leaves these in the sphere of subjective, individual experience, and can assign to the objects and laws of nature a reality which again is only logical.

But sensations and their logical elaboration do not exhaust experience. There are elements of value which are not products of thought activity or mere sensational content, yet which belong to primitive, immediate experience (*Erlebnis*). Some of these (Shaftesbury, Bergson, Dilthey, Rickert) are examined, and found not to afford an adequate basis for judgments of reality. These the author finds to be rooted in an original sense of activity, which carries with it the recognition of real things as objects, hindrances or instruments of our actions. This reality is not an inference of scientific thought, but a presupposition of all scientific activity. The presentation of this position is extremely acute and significant. Only two or three phases can be mentioned here.

Theory forms but one side of our scientific activity. Science springs out of our practical needs, is tested by its applications, is the means by which we master and re-create our world, and is bound from first to last to our active life. It brings our activities into a connected system (*sie ist ein Wirkungszusammenhang*). The very objects which science thus systematizes are primarily objects of our activity.

The most primitive sensations contain this factor; it belongs to their original character that they are significant for action, and limit it. We are not passive spectators of a panorama of sensations, but are in constant reciprocal commerce with them. In this original sense of action lies the experience (*Erleben*) of reality, a germ which is indefinitely differentiated and corrected in the development of science, but which is presupposed and not produced by science. So when science transforms our world into a system of mathematically related non-qualitative objects in space, this represents but one aspect of a process that must rest at last upon direct experience of action.

The distinction between living and non-living objects is a differentiation of this original sense of reality, which contains both as aspects of one experience. As in one direction there is a constant tendency to mechanize the whole physical world, in the other direction the sense of living reality is centered at the single point of persons. The mental and social sciences accordingly have precisely as good standing (though not yet an equally exact formulation) as the physical.

From this 'empirical' treatment the author excludes the principles of 'pure' mathematical and logical science. Were it not for this, nearly the whole of his position could be taken over into an instrumental theory of knowledge; and instrumental logic would profit by the consideration of some of his points.

J. Forsyth Crawford.

Beloit College.

Pessimisme et individualisme. Par G. PALANTE. Paris, Félix Alcan, 1914. —pp. vi, 166.

The object of this little book is to trace a parallel between pessimism and individualism, to show that both arise from a sense of the insupportable pressure, disharmony, tyranny, hypocrisy, and futility of the social medium. With this aim in view, the writer subjects to a brief, but penetrating, analysis the several varieties of pessimism which he recognizes. Romantic pessimism (Obermann, René, Byron, Leopardi, Heine, Vigny, Schopenhauer) involves an anti-social despondence, radically individualistic. Historic pessimism, nostalgically retrospective, as in de Gobineau and Nietzsche, remains anti-social so long as it remains pessimistic, so long as it compares the disgusting present with the glorious past, Persian or Hellenic. It grows less individualistic as it grows more optimistic, in anticipating the future epoch of the superman. Misanthropic or realistic pessimism, born of a cynical acquaintance with human fraud and imbecility (Schopenhauer, Stirner, Swift, Voltaire, Stendhal, Mérimée, Taine, etc.) presupposes or engenders contemplative isolation: scorn for men involves separation from men. Irrationalism (Goethe, Schopenhauer, Materlinck, Bergson, Stirner, von Hartmann, Guyau, Rabelais, le Dantec, etc.) does not necessarily lead to individualism, nor even to pessimism. It is not always sufficiently emotional to incite an anti-social revolt. But, if it does not conduce to positive individualism, it does result in a negative attitude towards social ends: irrationalistic nihilism is likely to express itself in a spectacular, 'dilettanti' individualism, sneering at the stupid, illogical world. Scientific pessimism, as the author labels the dissatisfaction resulting from the realization of the inevitable limits of scientific procedure (Jean Finot, Paul Bourget) cannot with certainty be said to have individualistic implications. Finally theological pessimism (Anatole France's *Les opinions de M. Jérome Coignard*, Brunetière) is a recognition of the contrarieties of human nature, and depends to a certain degree on irrationalistic pessimism, leading in some cases to a similar social dilettantism.

Of all the varieties of pessimism analyzed by the author, the romantic seems most certainly to imply individualism. The more intellectualistic varieties are less certainly individualistic, but, M. Palante reminds us, they are also less genuinely pessimistic. The only true pessimism is the pessimism of sentiment, and that is why it is naturally accompanied by individualism.

RADOSLAV A. TSANOFF.

CLARK UNIVERSITY.

Esprits logiques et esprits faux. Par FR. PAULHAN. Second Edition. Paris, Félix Alcan, 1914.—pp. 388.

The present edition of this book is substantially a reprint of the first edition, which appeared in 1896. The author in his introductory note comments on this fact, saying, that if he were to re-write the book he would very probably write it otherwise, but that on the whole there would be no essential changes in the underlying thoughts. To the reviewer it seems strange that this lapse

of eighteen years, just because of its richness in individual psychology, should not have changed the author's treatment of his subject. The modern psychology of individual differences is certainly not old, but its youth has been vigorous and of sufficient consequence to command the attention of any writer, even although he should only approach the border of his subject. This latter is the case with the book under review. It cannot be classed as individual psychology, although it bears that guise. Yet there is no reference to Binet; Stern and the Germans are not mentioned in any way, and about the only two English references are to Galton's *Inquiry into the Human Faculty*, and to Abercrombie's *Concerning the Intellectual Powers*. The book shows no influence of the objective methods of modern psychology, and no strictly systematic observations seem to have been employed in arriving at the various types of intelligence set up by the author. These latter are in fact deduced from a priori standards—possible ideals of perfection with appropriate gradations downward.

It is not psychology but rather characterology, and if we accept the book as such it certainly makes delightful reading, because of its literary style and literary method. Minds, according to the author, differ as to the matter or the quality of their images and ideas (whether auditory, visual, etc.), and also as to the form of their thoughts. It is this latter aspect of mind that is dealt with, because it is as indispensable as the former and possesses perhaps a greater interest. It is contended that it is of more importance to know whether the intellect is true or false, fine or gross, credulous or reflective, and so on, than to know whether it uses auditory, motor or visual images.

The principle of classification which the author lays down is the degree of logic or the quantity of systematization given to ideas. This leads to the main division of intellectual types into logical and illogical minds.

Previous to this, however, there is a section devoted to the relation between the intelligence and the feelings, as viewed from the point of view as to what types of individuals may be found in this connection. Here we discover on the one hand those whose intelligence is entirely at the beck and call of desire, of feeling, of passion; and on the other hand those in whom intellect is supreme, where in fact there is nothing but a brain served by the bodily organs, as with Spinoza and Descartes. Between these two extremes we have all possible transition stages, and in the evolution of intelligence we can trace the one type going over into the other. We must begin with desires and feelings, for ideas are at first intimately connected with our desires. All ideas owe their origin to an imperfection, to a defective adaptation. As long as the affective act fulfils adequately the needs of the body, the idea does not become detached or independent. Changes and shocks are necessary to provoke new ideas and new systems of ideas, and hence the origin of art, religion and science. To the reviewer it seems interesting to compare this with Freud's theory of the sublimation of the sexual instinct.

In this way we can trace the evolution from the lowest type up to the highest, and then from the highest we are plunged back again into the lowest,

for ideas go down again into society and become new desires, and thus the circle is begun anew.

Disregarding now the feelings and sentiments, and paying attention solely to the logical aspect of mind (and logic is held to be the general form of systematic association), we can distinguish also a series of types. Here we can range from the imbecile to the genius, from the great systematizers such as Comte to the 'well-informed' people, and then a little lower to the people of 'bon sens,' and ultimately down to the imbecile, who is not yet entirely devoid of all logic. But then again there are sub-types and extra types, such as the specialists, where one part of the mind may be fenced off and given over to the dominion of a merciless logic, whereas the rest of the mind is not subject to this sway. The same individual may, in fact, belong to many different types according to the standpoint from which we view him. There are the extremists, where logic may exist to a high degree but where it is used only to twist everything so that it shall conform to their point of view. The different kinds of association in accordance with the old division into contrast, contiguity and similarity, are also made use of in order to deduce therefrom another set of different mental types.

The illogical minds are divided into three types: (1) the fallacious reasoners; (2) those possessing a multiplicity of systems split off from each other; (3) the frivolous and puerile. In this connection reference is made to dreams and the kind of intelligence found in them. Delboeuf alone is referred to. The influence of Freud has not made itself felt in the author's treatment of this part of the subject. Later on, in the part dealing with the mental processes of the insane, the author sheds little light upon the subject, treating them entirely negatively as merely showing a lack of logic. Pathological states are referred to briefly, but no real study is attempted.

Scattered throughout the book are numerous examples taken from literature and philosophy, which are used to illustrate the various types, and even although one may not always agree with the author, yet these illustrations certainly add charm and interest to the work.

RUDOLF PINTNER.

OHIO STATE UNIVERSITY.

Gegenstandstheoretische Grundlagen der Logik und Logistik. By ERNST MALLY. Leipzig, 1912.—pp. 87.

The author of this study is known for his contribution to the co-operative volume *Untersuchungen zur Gegenstandstheorie und Psychologie* edited by Meinong. The aim of the study is to develop certain fundamental ideas of logic by means of Meinong's doctrine of objectives. By an objective is understood the unitary object of an act of judgment. There is a symbolic treatment of logical relations, of which inclusion, in the two forms of subsumption as between class and class or class and thing, and implication, as between objective and objective or objective and case, is taken to be fundamental. The logic of classes is based on the logic of objectives. The advantage of the idea of the

objective becomes apparent especially in treating questions of possibility and probability and of induction. What is possible or probable is always a 'case' of an objective. A case is an objective as fulfilled (or actualized) by and through a particular thing. A thing 'fulfils' all the objectives of a complete objective-complex. Objectives are either determinate or indeterminate; the latter may be fulfilled in a number of cases. The indeterminate objective would appear equivalent to Russell's propositional function. The theory of the concept is very ingeniously treated by means of the ideas of objective, case, thing, and fulfilment.

DONALD W. FISHER.

BRYN MAWR COLLEGE.

The following books also have been received:

Essays on Truth and Reality. By F. H. BRADLEY. Oxford, At the Clarendon Press, 1914.—pp. 480.

Interpretations and Forecasts. A Study of Survivals and Tendencies in Contemporary Society. By VICTOR BRANFORD. New York and London, Mitchell Kennerley, 1914.—pp. 411. $2.50 net.

Second Characters or the Language of Forms. By ANTHONY, EARL OF SHAFTESBURY. Edited by BENJAMIN RAND. Cambridge, At the University Press, 1914.—pp. xxviii, 182.

The Instinct of Workmanship. By THORSTEIN VEBLEN. New York, The Macmillan Co., 1914.—pp. xix, 355. $1.50.

From Locke to Montesorri. By WILLIAM BOYD. New York, Henry Holt and Co., 1914.—pp. 271.

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Die Methode der Erkenntniss bei Descartes und Leibniz. Zweite Hälfte, Leibniz' Methode der formalen Begründung Erkenntnislehre und Monadologie. Von HEINZ HEIMSOETH. Giessen, Alfred Töpelmann, 1914.—pp. 146. M. 4.50.

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Diderots Weltanschauung. KARL V. RORETZ. Wien, Gerold & Co., 1914.—pp. 31.

Le Dieu de Spinoza. Par GABRIEL HUAN. Paris, Alcan, 1914.—pp. 338.

Annales de L'Institut Supérieur de Philosophie. Université de Louvain. Tome III. Louvain, Institut Supérieur de Philosophie; Paris, Alcan, 1914. —pp. 628.

Le Relativisme Philosophique chez Georg Simmel. Par A. MAMELET. Paris, Alcan, 1914.—pp. ix, 214. Fr. 3.75.

Maine de Biran, Critique et Disciple de Pascal. Par A. DE LA VALETTE MONBRUN. Paris, Alcan, 1914.—pp. v, 322. Fr. 8.

Le Sentiment de la Nature et son Expression artistique. Par A. DAUZAT. Paris, Alcan, 1914.—pp. 279. Fr. 5.

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L'Intellectual. Étude Psychologique et Morale. Par A. CARTAULT. Paris, Alcan, 1914.—pp. 311. Fr. 5.

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Le Hasard. Par ÉMILE BOREL. Paris, Alcan, 1914.—pp. iii, 311. Fr. 3.50.

L'Image et les Réflexes Conditionnels dans les Travaux de Pavlov. Par MARCELLE DONTCHEF-DEZEUZE. Paris, Alcan, 1914.—pp. xvi, 176. Fr. 2.50.

Moral Religieuse et Morale Laïque. Par R. ALLIER, G. BELOT, G. CANTECOR, EUG. EHRHARDT, W. MONOD, TH. RUYSSEN, CH. WAGNER. Paris, Alcan, 1914.—pp. iv, 271. Fr. 6.

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La Morale della Simpatia. Ludovico Limentani. Genova, A. F. FORMÍGGINI, 1914.—pp. xvi, 260.

Il Vecchio e Il Nuovo Problema della Morale. E. JUVALTA. BOLOGNA, Nicola Zanichelli.—pp. x, 135.

SUMMARIES OF ARTICLES.

[ABBREVIATIONS.—*Am. J. Ps.* = *The American Journal of Psychology; Ar. de Ps.* = *Archives de Psychologie; Ar. f. G. Ph.* = *Archiv für Geschichte der Philosophie; Ar. f. sys. Ph.* = *Archiv für systematische Philosophie; Br. J. Ps.* = *The British Journal of Psychology; Int. J. E.* = *International Journal of Ethics; J. of Ph., Psy., and Sci. Meth.* = *The Journal of Philosophy, Psychology, and Scientific Methods; J. de Psych.* = *Journal de Psychologie; Psych. Bul.* = *Psychological Bulletin; Psych. Rev.* = *Psychological Review; Rev. de Mét.* = *Revue de Métaphysique et de Morale; Rev. Nèo-Sc.* = *Revue Nèo-Scolastique; Rev. Ph.* = *Revue Philosophique; Rev. de Ph.* = *Revue de Philosophie; R. d. Fil.* = *Riviste di Filosofia e Scienze Affini; V. f. w. Ph.* = *Vierteljahrsschrift für wissenschaftiche Philosophie; Z. f. Ph. u. ph. Kr.* = *Zeitschrift für Philosophie und philosophische Kritik; Z. f. Psych.* = *Zeitschrift für Psychologie und Physiologie der Sinnesorgane, I. Abtl.: Zeitschrift für Psychologie.* —Other titles are self-explanatory.]

Zur Entwicklung des Rationalismus von Descartes bis Kant. H. PICHLER. Kantstudien, XVIII, 4, pp. 383–418.

Rationalism has been treated inadequately by historians of philosophy. This is very evident in the common misunderstanding of Kant's relation to rationalism. From Descartes to Kant there was an *élan* of development, which Kant, far from checking, helped upon its way. Descartes contributed to rationalism the criterion of clearness and distinctness of ideas and the method of deduction. His doctrine of rational knowledge was: *nulla scientia nisi per intuitum vel deductionem.* All evidence rests on intuition. The standard of evidence is expressed in the *cogito ergo sum*—an error in reasoning which was both fruitful and disastrous in the Cartesian rationalism. Descartes seemed to prefer to receive the validity of mathematical knowledge from the hands of his fallaciously obtained God rather than to get it at first hand. Spinoza's most essential contribution to the rationalistic philosophy was his deepening of the conception of reason, which became for him a metaphysical principle: *ratio sive causa.* From this it follows that everything is strictly determined. The nature of a thing is determined by its concept or definition. An adequate definition is not only a *causa cognoscendi* but a *causa essendi.* All things follow from the concept of the totality of things, or *Natura naturans.* The Spinozistic concept of God is therefore the law which determines every content; for the *Natura naturans* is no mere logical first cause, but the *Weltwesen* comprehended in the *Weltbegriff.* The concept of adequate knowledge is the final synthesis of Spinozistic rationalism. From his conception of immanent truth there followed much of the Leibnitzian philosophy. The fundamental proposition for Leibniz is that of sufficient reason, which left on his hands the problem: What conditions must be fulfilled if the principle of sufficient reason is to be valid? He found the solution in

the concept of genera, the individuals of which must present a *universitas ordinata*. As 'nature makes no leaps', there exists between the individuals of one genus, and also between genera, a regularity of differentiation which assures to each individual a place in the system. This is the law of continuity. How far this concept of rational determinism carried Leibniz is shown by the relation of the principle of reason to the principle of contradiction. For Leibniz, every impossibility contained at least an inner contradiction, and that which was not contradictory was at least possible. Reason existed for Leibniz only where logical necessity existed. Everything that is, therefore, exists by logical necessity, or has a reason. Since the principle of contradiction defines what reason is, these two principles are seen to be inseparable. As Couturat rightly points out, the principle of sufficient reason says nothing except that every true proposition is analytical. Though this means that knowledge from analytic judgments is frequently only problematical, yet we may have analytical principles which are categorical, if we assume that logic contains a creative principle; or, in other words, that logic does not *have* reason, but *is* reason. Leibniz did not regard the principle of reason as a problem in itself, as did Kant. Leibniz ontologized concepts, while Kant, on the other hand, regarded the 'Idea' as anti-metaphysical. Kant, however, did not solve the problem he set for himself, but merely stated a new problem. The results of Meinong and von Husserl have a bearing upon that problem. In conclusion, it must be understood that the essence of rationalism does not consist in the presupposition of reason as an especial source of knowledge; it consists rather in the goal which is established for knowledge.

ALMA R. THORNE.

Les nouveaux courants d'idées dans la sociologie contemporaine. E. DE ROBERTY. Rev. Ph., XXXIX, 1, pp. 1–31.

One of the great movements in the history of thought has been the progressive 'exodus' of the sciences from the domain of religious and metaphysical conceptions. An epoch in this movement was marked by the founding of the science of sociology by A. Comte, but this posited the problem, at least equally important, of transforming philosophy. About 1880, a new school of thinkers, modestly calling themselves the Neo-Positivists, began the reduction of the remaining branches of philosophy—ethics, aesthetics, psychology, and especially logic and the theory of knowledge—to the position of social sciences. The present article treats of the resulting reconstruction of sociology. In France, Durkheim was among the first great sociologists to embrace the neo-positivist doctrine of social ideality and organic solidarity against the mechanical solidarity of the economic school. He seems to go to the opposite extreme, however, of regarding social organization and the forms of collective activity as causal products of the arrangement of mental concepts, whereas neo-positivism regards both as coördinate effects of a common cause, the collective experience or interaction of consciousnesses. In regard to the bio-social theory of mind, the great touchstone of neo-positivism, he wavered at

first, but later pronounced definitely for the view of psychology as a concrete science dependent on sociology. He and his school have also embraced the neo-positivistic doctrine of the sociological basis of philosophy. Man is the product of society rather than society of man (as thought Spencer and Tarde), and sociology, even more than psychology, is the supreme 'science of man.' They likewise adopt the ethics of the school, which finds the real problem of the moralist in the construction of a science of customs, as well as others of its characteristic tenets, the 'law of the four factors', the 'law of retardation', etc. Beside the name of Durkheim should be placed that of Lévy-Bruhl. This writer thinks the traditional problem of social psychology must be inverted. The real question is not as to the origin of the social consciousness and its explanation in terms of given individual consciousnesses, but rather is it the consciousness of individuality which must be accounted for on social grounds. Besides these pre-eminent names of French sociology, numerous other able thinkers—Izoulet, Gaston Richard, Lalande, Duprat, etc., share similar views. In America, Baldwin's "Thoughts and Things," especially the second part, "Experimental Logic or Genetic Theory of Thought," is a very important attempt to detach the theory of knowledge from philosophy and transform it into a sociologic discipline. Baldwin finds social community to be the basis of objectivity, and thinks the real badge of certitude is the mark of social manufacture: 'made in society'! So, too, in Germany. The neo-positivist view is virtually identical with the energy-sociology of Ostwald, while Simmel's "Soziologie, Untersuchungen über die Formen der Vergesellschaftung" (1908) shows the same influence, though developed much less clearly and consistently. In certain pages, the latter author approaches closely to the neo-positivistic view of social phenomena; but he appears to be quite confused as to the relations of the three groups of sciences, the biological, sociological and psychological. In Italy, too, where the ground was better prepared than in Germany, England or Russia, the neo-positivistic conception of sociological problems has received a sympathetic welcome. Especially notable are the doctrines of the philosophic and sociological school of Robert Ardigo, whose theory of justice shows this influence very decidedly.

F. H. KNIGHT.

Idealism and the Reality of Time. BERNARD BOSANQUET. Mind, 89, pp. 91–95.

Time appears as real. All appearance is a partial reality. Therefore, time is a reality though not ultimate. It is as real as the finite world. Time is the process of finite things, and, therefore, it can not be ultimate as a character of the infinite universe. Space and time are the two great shapes of externality which we find transformed in various degrees upwards from the very first stratum in which it becomes compatible with experience. We partly understand time and space, but we are partly in them, and so far as we are in them we do not understand them. When we say that the self differs from a natural object by carrying its past with it in an intelligent form, we are in the

true sense including, by transforming, externality. In full reality there is no mere past, mere present, or mere future; every event lives throughout the whole. We thus leave Time behind.

HENRY BENTSON.

L'innéisme des fondements mathématiques. LOUIS DE CONTENSON. Rev. de Ph., XIV, 2, pp. 169–193.

This is the second of three articles on the 'apriorité' of mathematics. In the first article, a criticism of Kant from a philosophical point of view, the writer found the Kantian theory of mathematics seriously at fault. The present article, a criticism of Kant from the standpoint of mathematics, corroborates the conclusions of the first. Assuming the apodictic certainty of mathematics, Kant seeks to justify this certainty by grounding mathematics on the a priori forms of intuition: space and time. But space and time are objective, a posteriori, and imposed on the mind from without. Therefore, to base mathematics on space and time is to make it an empirical science and divest it of its absolute certainty. Moreover, an a priori origin of anything is no guarantee of its certainty, for supposed a priori truths are as difficult to verify as others. But mathematics does not rest on certain judgments of a priori origin. The fundamental principles of mathematics are not judgments, not synthetic, and not a priori; they are hypotheses, conventions, symbols cataloguing different systems of magnitudes. Such propositions as: "space can have only three dimensions," "some symmetrical figures are not superposable," and "three straight lines in the same plane form a triangle," cited by Kant as fundamental principles of mathematics, are not judgments, not synthetic, and not a priori. And far from being apodictically certain and of complete generality, as Kant supposed, they have been shown to be false, relative, or of limited application. They are true for the Euclidian geometry alone, the only geometry that Kant knew, on the supposition that mathematics is an empirical science, and not the work of pure reason unaided by experience. Kant's principles hold true of our three dimensional world, in which they are observed facts; but in the realm of pure reason, where *n*th dimensional worlds are as real as a three dimensional world, they are meaningless. Their opposites are equally true and are employed by the newer mathematics in dealing with *n*th dimensional spaces. Mathematical principles, however, do possess a certainty, the origin and nature of which will be discussed in the last article of this series.

RAYMOND P. HAWES.

L'innéisme des fondements mathématiques. LOUIS DE CONTENSON. Rev. de Ph., XIV, 3, pp. 288–309.

This is the last of three articles on the 'apriorité' of mathematics. The apodictic certainty of mathematics is not dependent on an a priori origin of its subject matter, magnitude. The notion of magnitude is of empirical origin, the result of observing external and internal objects, or perhaps succession in

time or plurality in space. Magnitude exists in a variety of forms or systems relative to one another, and the nature of the system in which we live is an empirical problem to be solved by experience alone. Moreover, the 'theory of transformation', by which we pass from one system of magnitudes to another, reveals the fact that the origin of the notion of magnitude exerts no determining influence on either the development or certainty of mathematics. Mathematics does not rest on a groundwork of certain judgments of a priori origin. The question whether mathematics has a 'certain' basis is unmeaning, for mathematics has no basis at all. The sole principle taken absolutely for granted is that of all reasoning or discourse, the principle of contradiction. Two judgments, contradictory if admitted simultaneously, may be admitted successively without contradiction, but any principle contradictory in its successive consequences must be rejected. The certainty of mathematics is due to the nature of its subject matter and of its method of procedure. Mathematics is a deduction of attributes from elements by judgments exclusively analytic. It affirms that if such elements have such attributes, there exists between them such relations. Hence, its conclusions are relative to premises and have a certainty proportional to that of the premises. Yet the conclusions are necessary, because no opposite judgments can be proposed to render them false, or doubtful, for the premises have been stated in all possible forms. Furthermore, the validity of the premises cannot be called in question, because they are not to be regarded from an absolute point of view. Though true when stated, they yield immediately to inverse judgments, when the latter are stated. Mathematical principles have only the validity we wish to attribute to them with reference to the system of magnitudes under consideration; but this validity we can make as great as we please. Mathematical principles are neither a priori syntheses nor empirical facts; they are conventions or labels for cataloguing various systems of magnitudes, some applicable to all, some to only one system. But experience alone can enable us to choose from all possible conventions those applicable to our own world.

RAYMOND P. HAWES.

On the Nature of Acquaintance. BERTRAND RUSSELL. The Monist, Vol. XXIV, 1, pp. 1–16.

This article is introductory to a series of articles which will advocate a kind of an analysis of the simplest and most pervading aspect of experience, namely acquaintance. It is a preliminary survey of the data of experience. Faint and peripheral sensations are included in experience. Attention is not a prerequisite for experience, for attention is a selection among objects that are 'before the mind' and, therefore, presupposes a larger field. Some facts—those which we see for ourselves—are included in our present experience. We now experience past things which we remember, for the remembering refers to something known to be in the past, a definite experience in the past, and not to the image which we call up now. We know that the group of things now experienced is not all-embracing, partly because of our belief in

a future, partly from the knowledge of the fact that we have forgotten something, and partly from the region of abstract mathematics and logical possibility. We regard our present and past experiences as all parts of one experience, of 'our' experience, through memory of a certain kind. The memory which prolongs our personality backwards in time is the memory of our experiencing, not merely of the things which we experienced. We believe that 'our' total experience is not all-embracing because; (*a*) there is no logical reason against it, (*b*) in the logical world there certainly are facts which we do not experience, (*c*) the common sense assumption, that there are particulars which we do not experience, has been found thoroughly successful as a working hypothesis.

HENRY BENTSON.

Zur Geschichte der Skepsis. I. Franciscus Sanchez. DR. A. CORALNIK. Ar. f. G. Ph., XX, 2, pp. 188–222.

Scepticism is not a doctrine, it is a thought genus, of which there are two species, the scientific, and the ethical-psychological. Franciscus Sanchez is a typical representative of the older scientific scepticism. Primarily he was a physician, and most of his writings are medical; but he also published a "Tractatus Philosophicus. Quod nihil scitur." The question as to whether knowledge is possible is left open; he is only concerned to prove that we know nothing, to the end that the yoke of Aristotelian logic may be thrown off. In eloquent language, he begins with the story of his dissatisfaction with past and present philosophical systems; and while he concludes with a conviction of the impossibility of laying hold upon certain truth, he asserts an untiring purpose to follow after nature by means of hypotheses, although time prove one after the other inadequate. The heart of his scepticism is the unknowability of the thing in itself. For the most part his discussion is a criticism of language in mockery of the scholastic worship of words and definitions. The endless regress of definition, the infinite richness of reality, the inability to image ultimate notions, give the grounds for his assertion that we know nothing. His criticism of the faculty of reason is based upon the propositions, that all knowledge is an organization of sense data, and that these data are untrustworthy. After these proofs that we know nothing, the third part of his treatise, which shows that nothing can be completely known, seems quite superfluous. Here his interest is chiefly theological. He desires to show that as finite creatures we can have no clear and distinct idea of the Creator. The flaw in his argument is his conception of the nature of science. He is not content with the systematization of experience, with truth valid within experience, but insists that we know nothing, since we do not grasp the thing in itself. Yet on the whole, his maintenance of a critical rather than a dogmatic attitude, the insistence on the wherefore with which he concludes, performed a real service in the development of philosophy.

ANITA FREDERICA DE LAGUNA.

Psychology as a Science of Behavior. B. H. Bode. The Psychological Review, XXI, no. 1, pp. 46–61.

The definition that psychology is concerned with 'the description and explanation of states of consciousness', is falling into disrepute. The assumptions involved in this definition still persist. Professor Watson, however, states that all that is significant in psychology is retained if the study is changed from introspection to behavior. According to Professor Angell the study of behavior is inadequate because of the inability to trace out the behavior without appeal to mental processes, and because mental processes are worthy objects of study. This latter position assumes that introspection yields 'purely subjective facts', and for that reason a strict behaviorist could not use them. Does introspection yield subjective facts? The keen eyed scientist might as well be treated as gathering subjective facts as the psychologist. The psychologist and the scientist use the same mode of approach, but it is assumed that their respective subject matters are different. According to Professor Titchener, psychology is concerned with experience in its aspect of dependence upon the body. This word dependence is ambiguous, so that consciousness is treated sometimes in terms of behavior, and at other times in terms of mental states. When dependence is used in this latter sense we have the old distinction and its accompanying problems of primary and secondary qualities. The behaviorist must differentiate the behavior as subject matter for psychology from other forms of behavior. The behaviorist is interested in the movements resulting from the stimulus only in so far as they constitute response. Psychology thus is a study of certain causal relationships. These causal relationships are concerned with a unique kind of relation between stimulus and response. The response is one which seeks and maintains the stimulus necessary for further response. The characteristic trait of conscious behavior, the subject matter of psychology, is that stimulus and response develop concomitantly. The distinctive trait of introspection is not its method or its subject matter, but its problem. The purpose of introspection is to discover the physical and physiological conditions of experience.

C. M. Hobart.

Hasard et Déterminisme. A. Darbon. Rev. Phil., XXXIX, 3, pp. 225–265.

The events which we attribute to chance have this singular character, that individually they cannot be predicted, but taken in mass their distribution may be accurately calculated in advance. A 'law of chance' seems at first glance a contradiction in terms, as chance is conceived as the negation of law. Yet predictions based on the 'law of large numbers' hold good in practice and the law must in some sense be valid. The calculation of probabilities originated in a question put to Pascal in connection with a game involving chance, and it was with such questions that early investigators—Bernouilli, Huygens, Montmart, Laplace, D'Alembert, etc.—principally dealt. But the application in recent times to social phenomena, vital statistics, crime, etc., has broadened the problem while adding interest to it. Practical results seem to necessitate

the admission of the validity of the concept of chance, in the sense that two events may be in reality equally probable (or in any other ratio). The problem which has puzzled those who have worked with laws of chance and attempted to derive them logically is, how to reconcile such a concept with universal causal determination, in which as scientists they have put implicit faith. Laplace thought the distribution of events according to probability might be explained by supposing the idea traceable in part to our knowledge (of behavior *en masse*) and in part to our ignorance (of the determining causes of individual instances). Two sets of causes are thus thought of as operating; one group are permanent and known and the other variable and unknown, while the former tend to preponderate over the latter in proportion to the number of instances considered. More recently Poisson, Cournot, H. Poincaré, LeDantec and others have grappled with the problem, but no one has been able to reconcile the notions of an event as really fortuitous and yet rigidly determined. It may be taken as established that there is no way out of the following dilemma: Either the theory of probabilities is an illusion, or else such a thing as contingency has a place in the world. A systematic treatment of chance thus conceived must take it up under two forms. The first of these is causal determination itself. For causes cannot furnish any final explanation of an event or give it a character of true necessity. Causal explanation is at best hypothetical: *if* the cause, then the effect; the cause must be assumed as *given*. Hence there is no reason at last why the event is as it is, and it would certainly have been different if previous events had been other than they were. The second form of contingency appears in the reasoned acts of sentient beings, in so far as they err in achieving their end through imperfect psycho-physical co-ordination. Examples are the distribution of shots in target-shooting, errors in reading scientific instruments, etc. A graver case is that of the divided will itself, hesitating between two ends. It is merely a verbal solution of the problem of choice to say that the stronger motive must win out, since we have no possible way of knowing which is the stronger (as in the case of mechanical forces) and simply arbitrarily call that one stronger which does finally control action. Such contingency is obviously an imperfection, and it is crudely inconsistent to make it the basis of responsibility in ethics and of certitude in epistemology. Still, it prepares the way for liberty by interrupting the blind, fortuitous succession of perceptions and reactions and calling the personality into play. Liberty is properly defined as completely motivated action, and must be regarded as a victory over contingency, not as contingency itself.

F. H. KNIGHT.

Des bases méthodologiques de la géographie humaine. PHILIPPE CHAMPAULT. Rev. de Ph., XIV, 2, pp. 113–136.

In the study of the relation of the earth to man the older geography was purely descriptive, while the newer geography seeks to be explicative and calls itself 'la géographie humaine' or 'l'Anthropogéographie.' Élisée Reclus

represents the older tendency and Jean Brunhes, the newer. Reclus merely describes the modifications of the earth's surface due to man, while Brunhes attempts to connect causes with effects and to formulate laws. For Reclus 'la géographie humaine' is the study of " the modalities of the earth's surface due to human activity"; for Brunhes it is "the science of the modalities of human activity on the surface of the earth." For Reclus place is the true and only object of geographical study; for Brunhes place is only the occasion or point of departure. Consequently Reclus does not encroach on the fields of the other sciences, while Brunhes creates sociology instead of geography. In tracing out the reciprocal influence of man and place or of historical events and geographical facts, Brunhes is dealing with human societies or groups, and therefore with social relations and facts or with the sociological aspect of such relations and facts. Wherever the 'Anthropogéographes' have been explicative, they have dealt with sociological facts; but, since they are not specialists in the latter field, the quality of their work has been poor. Any scientist who can utilize sociological data in the description of his own phenomena is welcome to them, but he should accept such data as authoritative and not attempt to transform or remake them. If the 'Anthropogéographes' wish to be merely geographers, they should accept the conceptions and procedure of Reclus and merely describe the earth's surface without encroaching on the domain of the sociologist; but if they wish to explain, to relate causes and effects, and formulate laws, they should become genuine sociologists and employ the accredited procedure and methods of sociology.

RAYMOND P. HAWES.

The Work of Henri Poincaré. HAROLD CHAPMAN BROWN. J. of Ph., Psy., and Sci. Meth., XI, 9, pp. 225–236.

In Poincaré were united such intensity of philosophic interest and scientific creativeness as have never before been united in one man, with the exception of Aristotle, and possibly Leibniz. His reflections on the nature and significance of scientific truth mediate between the rationalistic ideal of a static truth and a sceptical relativism. A new hypothesis must keep alive something of the old one it supersedes, for, though inadequate, the discarded hypothesis had some measure of real usefulness. Science always implies the organization of facts; and, while experiment is the path to knowledge, no mere collection of experiments constitutes a science. The purpose of our theories is not to describe things. Their durability lies in their power to simplify and unify the relations between things; their ephemeral aspect, in their descriptive implications. Mathematical facts expressed in Euclidean terminology can be translated into any non-Euclidean system; so that geometries are only languages, transcriptions of experience, and are not founded on arbitrary postulates. M. Poincaré believed that morality was founded on feelings; hence there could be neither a science of morals nor a conflict between science and morality. Finally, the value of science for him was not expressed in material achievement; science was not the mere servant of man, but 'the

assertion of a cosmic law through which man becomes more finely moulded than the beasts.' Truth, not loved truths, succeed. 'Truth is eternal, though ideas perish, because ideas beget ideas, as men beget men.'

ANITA FREDERICA DE LAGUNA.

Ethical Pessimism in Bergson. J. W. SCOTT. Inter. J. of Ethics, XXIV, No. 2, pp. 147–167.

The aim of the paper is to point out the ethical pessimism in Bergson, and to question whether there is any reason for it in his account of the comic. Bergson's problem is what do we laugh at when we laugh? His idea is that the comical is the unadaptable and the unadaptable is the rigid. In pointing out the comic in life, he shows that so much of life is ridiculous, that the whole loses in ultimate value. The way to test the justice of the conclusion is to discover the moral view which underlies this conception of the comic. According to Bergson laughter is a means of securing moral conduct. Our question is whether such a means does not sacrifice some absolutely valuable aspects of life. Bergson points out correctly that the comical is the mechanical. But is it the mechanical aspect at which society laughs? What is comical is not the mechanical, but the mechanical movement of life. Bergson obscures the predominance of the human aspect—that the human aspect is the cause of the comical. The distinction between the comical and the moral is the presence of serious feelings in the latter. Such a statement is tautology. According to Bergson whenever life turns backwards, repeats itself or allows any of its elements to become transposable, it becomes comical provided the picture does not touch our feelings. The real effect of the serious and the comic is secured by the substitution of abrupt transitions for life's supposed fine gradations. The serious and the comic differ in degree as to the substitution. In the serious the substitution is not felt. For Bergson the comical presents abrupt transitions, the moral delicate gliding movements. But according to life is not the moral often abrupt and mechanical? To rule out the mechanical in the moral sphere is to rule out the only kind of morality we can possess. Such a procedure leads directly to a moral relativity. According to such a view the good is simply making delicate adjustments to varying circumstances. The moral imperative becomes, 'be adaptable'. We may sum up the position of this paper as follows. Bergson is correct in showing that the comical and the moral possess a common character. He fails to recognize the relative spheres of the comical and the moral, since he fails to see that this common character is a constituent of society's ideal.

C. M. HOBART.

Are Meanings Inherited? C. LLOYD MORGAN. Mind, XXIII, 90, pp. 169–179.

It is almost impossible to adduce examples of purely instinctive behavior, for there is so much instinctive warp and so much intelligent woof in all of our actions. The author examines the standpoint of Stout and MacDougall, who

hold that meanings are inherited as well as acquired, and attempts to show that in most cases—if not in all—the inherited meanings are really the result of previous activity on the part of the individual. The establishment of associations is the work of intelligence. When associations have been formed, revival is made possible. That which is so revived is comprised under the head of (secondary) meaning, which raises the original presentation to the perceptual level. The reaction to these presentations will be different from the reaction to the original ones. If there is a difference between inherited and acquired meanings—if all are not of the latter kind—it is difficult to distinguish between them. The 'as ifs' in relation to instinctive behavior must not be interpreted as if they really were. The prevision of animals, in most cases, may be attributed to the intimate correlation between hereditary relatedness and relatedness to the environment. We must be careful not to attribute to animal behavior that which distinctly belongs to the mental life of human beings. At any rate, the question of inherited meanings has practically no bearing upon the interpretation of psychological problems.

HENRY BENTSON.

Psychic Function and Psychic Structure. HENRY RUTGERS MARSHALL. Mind, Vol. XXIII, pp. 180–193.

With regret the author sees the study of structural psychology give way to so-called functional psychology or the study of behavior. These studies of behavior are primarily biological and only incidentally psychological and involve teleological assumptions or implications which are foreign to strictly psychological manner of thought. Functional or 'process psychology' as well as structural must use the introspective method, and both are essential. The development of all science comes when attention is turned, not to the characteristics most easily discerned, but to searching out fundamental laws of which these characteristics are merely emphatic exemplifications. Consciousness is a psychic system rather than an elaborate combination of isolable psychic elements. The consciousness of a given moment corresponds in some manner with the activities in the same moment of some part at least of the individual's nervous system. All nerve substance—so long as it is alive—is active. These activities the author calls neururgic emphases, and they never stand alone, but each appears as part of what he calls a neururgic pattern. The activities of the whole nervous system are fundamentally of the same nature throughout. All parts of the correlated nerve system are reciprocally efficient. So consciousness is of the same fundamental nature throughout, and all parts of consciousness are reciprocally related. Diversities of psychic process are really diverse manifestations of one fundamental process. There is a receptive and a reacting nerve activity which corresponds to cognition and conation. Each neururgic emphasis and each neururgic pattern is *sui generis*, as is likewise each mental item and each psychic pattern. Each psychic emphasis shows some measure of complexity, of intensity, of agreeableness or disagreeableness, some degree of stability or realness, and some temporal qualification—five

senses of relation. All of these must exist together in one moment in any psychic emphasis.

HENRY BENTSON.

A Definition of Causation. W. H. SHELDON. J. of Phil., Psy., and Sci. Meth., Vol. XI, No. 8, pp. 197–208.

This article is the first of a series which will deal with the subject of causation. The author points out the fact that although not much is said about this subject today, still in our transactions with reality—so far as reality is vouchsafed to mortals—the category of causality is inevitable and ubiquitous, because it deals with the connection of events. In order to arrive at a valid definition of causation the following method is proposed: take the analysis which science furnishes of each cause and of each effect, and of the process by which the one turns into the other; suppose this is accomplished for all kinds of cases which are treated in the various sciences; and suppose, finally, that we find common to all cases a certain logical structure. This structure will constitute an empirically grounded definition of causation. We must choose an empirical or concrete method and not the abstract or deductive. Causation, because of its own special nature, is internal to the particulars of the actual world. Even though our theory of causation is not actual but only ideal, it is an ever closer approximation to existing facts, and their detailed content depends more and more upon the nature of those facts. In the fields of science the cases of cause-effect must be selected according to the following rule: whenever a law is spoken of, or a principle, in accordance with which one actual fact, situation, or event uniquely determines another fact—or its own future state—then we have what science treats as causation. In tracing down the different sciences to see how many of them offer distinct types of causation, he concludes that only the field of physics need be examined. The total field of nature, so far as studied by physics, is comprised under the following divisions: mechanics, including static and dynamic, properties of matter such as elasticity, capillarity, density, etc., heat, sound, light and radiant energy, magnetism and electricity. To these fields we add those embodied in transformation of energy from one field to another, e. g. of electricity into light, of motion into heat or light, etc. Again he makes a synthesis and concludes that according to the present view of science, all cause-effect situations in nature are in the last analysis, and so far as there is general agreement, either mechanical cases, or cases determined by 'properties of matter', such as elasticity, friction, etc., or cases of electricity, or combinations of some or all of these.

HENRY BENTSON.

NOTES.

The second volume of the *Jahrbücher der Philosophie*, edited by Professor Frischeisen-Köhler of the University of Berlin, has just been published. It is proposed to deal in each of the yearly volumes of this publication with some special field of philosophy: volume I was devoted to Theory of Knowledge and Psychology, volume II is occupied with Practical Philosophy, including Education, while it is proposed next year to deal with problems of Metaphysic and Religion.

Since the death of Professor Heinze the revision of Überweg's *Grundriss der Geschichte der Philosophie*, which he carried through several editions, has passed into the hands of a board of editors composed of Professors K. Praechter, M Baumgartner, M. Frischeisen-Köhler, and Privat-docent K. Oesterreich. The work is contained in four parts, of which the first, dealing with Ancient Philosophy, and the third, with Modern Philosophy to the end of the eighteenth century, have already appeared. The other parts are announced for publication in a short time. These parts will constitute the tenth revision of the history of Ancient and Mediaeval Philosophy, and the eleventh revision of the history of the modern period.

At Harvard University Professor Josiah Royce has been transferred from the chair of the History of Philosophy to the Alford Professorship of Natural Religion, Moral Philosophy, and Civil Polity, formerly held by Professor George H. Palmer. Professor W. E. Hocking has been called from Yale to a professorship of philosophy, and R. F. Alfred Hoernlé of Armstrong College, Newcastle-on-Tyne, has been made assistant professor.

Among other changes in philosophical teaching positions we note the following: Professor A. K. Rogers of the University of Missouri has been called to Yale University; Professor George H. Sabine of Stanford University has been appointed to a professorship of philosophy at Missouri; Dr. E. L. Talbert of the University of Chicago will next year have charge of the work in philosophy at the University of Cincinnati during the sabbatical leave of Professor Tawney; Dr. J. F. Dashiell, (Ph.D., Columbia), has been appointed instructor at Princeton University, and Roberts B. Owen, assistant in Cornell University, has been called to Columbia University as lecturer.

We give below a list of articles in the current philosophical magazines.

THE JOURNAL OF PHILOSOPHY, PSYCHOLOGY AND SCIENTIFIC METHOD, XI, 8: *W. H. Sheldon*, A Definition of Causation. I.; *Morris R. Cohen*, Rule versus Discretion; *Irving Babbitt*, The Modern Spirit and Dr. Spingarn.

XI, 10: *W. H. Sheldon*, A Definition of Causation. II.; *H. M. Kallen*, Value and Existence in Art and in Religion.

XI, 11: *Hartley B. Alexander*, The Perception of Motion; *H. L. Hollingworth*, New York Branch of the American Psychological Association.

THE AMERICAN JOURNAL OF PSYCHOLOGY, XXV, 2: *G. Stanley Hall*, A Synthetic Genetic Study of Fear; *John Madison Fletcher*, An Experimental Study of Stuttering; *W. B. Cannon*, The Interrelations of Emotions as Suggested by Recent Physiological Researches; *Jared S. Moore*, The Articulation of the Concepts of Normal and Abnormal Psychology; Minor Studies from the Psychological Laboratory of Vassar College; *E. B. Titchener*, Laboratory Notes; *E. B. Titchener*, A Note on Sensation and Sentiment.

THE PSYCHOLOGICAL REVIEW, XXI, 3: *Harvey Carr*, Principles of Selection in Animal Learning; *George V. N. Dearborn*, Certain Further Factors in the Physiology of Euphoria; *William Healy*, A Pictorial Completion Test; *Eliott Park Frost*, Cannot Psychology Dispense with Consciousness?; *William J. Maloney*, The Mechanism of Mental Processes as Revealed in Reckoning.

MIND, 90: *C. Lloyd Morgan*, Are Meanings Inherited?; *Henry Rutgers Marshall*, Psychic Function and Psychic Structure; *F. Melian Stawell*, Some Problems of Philosophy; *Horace M. Kallen*, James, Bergson, and Traditional Metaphysics; Discussions: *C. I. Lewis*, The Calculus of Strict Implication; *Charles Mercier*, Is Inversion a Valid Inference?; *J. E. Turner*, Mr. Russell on Sense Data and Knowledge.

THE AMERICAN JOURNAL OF THEOLOGY; XVIII, 2; *George A. Coe*, The Origin and Nature of Children's Faith in God; *Karl Bornhausen*, The Present Status of Liberal Theology in Germany; *Lewis Bayles Paton*, Canaanite Influence on the Religion of Israel; *E. F. Scott*, The Significance of Jesus for Modern Religion in View of His Eschatological Teaching; *D. E. Thomas*, The Psychological Approach to Prophecy; *Durant Drake*, Widening the Church's Invitation; Critical Notes; *Edgar J. Goodspeed*, The Three Gospels; *Satyasaran Sinha*, Will India Become Christian?

THE HIBBERT JOURNAL, XII, 3: *H. Hensley Hensen*, Kikuyu; *R. H. Coats*, Sacraments and Unity; *W. Macneile Dixon*, Inspiration; *John Jay Capman*, Where Faith and Morality Meet; *Norman Kemp Smith*, The Middle Ages, The Renaissance, and The Modern Mind; *The Headmaster of Eton*, Criticism of the Public Schools; *Archibald Weir*, The Anthropological Point of View; *Benjamin B. Warfield*, The Twentieth-Century Christ; *B. H. Streeter*, The Suffering of God; *H. W. B. Joseph*, Mechanism, Intelligence, and Life; *A. D. Martin*, One Avenue to God; *Edith Hunter*, Order and Unrest; *Charles F. Dole*, The Great Alternative.

THE HARVARD THEOLOGICAL REVIEW, VII, 2: *Eugene W. Lyman*, Social Progress and Religious Faith; *Willard Learoyd Sperry*, Mark Rutherford; *Thomas Cuming Hall*, A Protestant and Social View of the Church; *Ephraim Emerton*, Martin Luther in the Light of Recent Criticism; *Frederic Palmer*, A Crisis in the Church of England; *Albert J. Edmunds*, Recent Translations of Buddhist Writings.

THE INTERNATIONAL JOURNAL OF ETHICS, XXIV, 3: *C. Delisle Burns*, What is Religious Knowledge?; *Charles W. Super*, Ethics as a Science; *A. Barratt Brown*, Intuition; *C. D. Broad*, The Doctrine of Consequences in Ethics; *N. C. Mukerji*, Idealism and the Conception of Law in Morals; *F. J. Gould*, An Ethical Teacher's American Tour.

THE MONIST, XXIV, 2: *Bertrand Russell*, On the Nature of Acquaintance. II. Neutral Monism; *Philip E. B. Jourdain*, The Principles of Mechanics with Newton; *Louis Trenchard More*, The Units of Measure and the Principle of Relativity; *Edmund Noble*, Purposiveness in Nature and Life; *Paul Carus*, Death (Poem).

KANTSTUDIEN, XIX, 1 u. 2: *Fritz Medicus*, Bemerkungen zum Problem der Existenz Mathematischer Gegenstände; *Richard Hönigswald*, Über Thomas Hobbes' systematische Stellung; *Hugo Spitzer*, Der unausgesprochene Kanon der Kantischen Erkenntnistheorie; *Heinrich Scholz*, Fichte als Erzieher; *Heinrich Richert*, Über logische und ethische Geltung; *Bernhard Hell*, Robert Mayer.

ARCHIV FÜR GESCHICHTE DER PHILOSOPHIE, XXVII, 3: *Willi Schink*, Kant und Epikur; *Jos. Klem. Kreibig*, Bernard Bolzano. Eine Skizze aus der Philosophie in Österreich; *Johannes Dräseke*, Zu Platon und Plethon; *P. Bokownew*, Socrates' Philosophie in der Darstellung des Aristoteles; *Louis Rougier*, La Correspondance des genres du Sophiste, du Philèbe et du Timée; *W. Sange*, F. P. v. Herbert.

ZEITSCHRIFT FÜR PSYCHOLOGIE, 68, 5 u. 6: *Richard Liebenberg*, Über das Schätzen von Mengen; *Alexander Kühn*, Uber Einprägung durch Lesen und durch Rezitieren.

REVUE DE PHILOSOPHIE, XIV, 4: *P. Charles*, La métaphysique du Kantisme. IV.—Le noumène; *P. Duhem*, Le Temps et le Mouvement selon les Scolastiques (cinquième article); *P. Florian*, De Bacon à Newton. II.—La méthod scientifique de la Société royale de Londres; *Ch. Boucaud*, Les initiatives de la procédure et la genèse historique des droits; *L. Pascault*, L'homme: sa nature, sa loi, sa destinée, d'après Blanc de Saint-Bonet.

XIV, 5: *J. Bulliot et M. Sérol*, La Philosophie et la pensée commune; *P. Duhem*, Le temps et le mouvement selon les Scolastiques; *P. Florian*, De Bacon à Newton. III.—La Société royale de Londres et les philosophes du XVII^e^ siècle; *G. Gondé*, Autour des Sciences occultes. Un Congrès dit "de Psychologie expérimentale"; *J. D.*, Comment aborder un sujet de dissertation?

REVUE PHILOSOPHIQUE, XXXIX, 4: *R. Goblot*, Logique et Psychologie; *A. Rey*, Vers l'intuition expérimentale de l'électron; *A. Schinz*, Le droit du plus fort et le droit dit "naturel"; *J. Delvaille*, L'idéalisme social.

XXXIX, 5: *J. de Gaultier*, Sous quelles conditions le mysticisme est légitime; *A. Rey*, Vers l'intuition expérimentale de l'électron; *N. Kostyleff*, Contribution à l'étude du sentiment amoureux; *C. Ranzoli*, Il caso nel pensiero e nella viata.

REVUE DES SCIENCES PHILOSOPHIQUES ET THÉOLOGIQUES, VIII, 2: *M.-D. Roland-Gosselin*, L'intellectualisme de Leibniz; *P. Synave*, La causalité de l'intelligence humaine dans la révélation prophétique; *Ét. Hugueny*, L'institution des sacrements. Étude apologétique; *M.-S. Gillet*, Les harmonies de la Transsubstantiation: sacrement et sacrifice; *A. Lemmonnyer*, Achima.

REVUE DE MÉTAPHYSIQUE ET DE MORALE, XXII, 2: *L. Dugas*, La "Feuille de charmille" de Jules Léquyer; *A.-R. Schweitzer*, Les idées directrices de la logique générique des mathématiques; *X. Léon*, Le socialisme de Fichte d'après l'État commercial fermé; *E. Laskine*, Les transformations du droit au XIX^e^ siècle; *G. Lechalas*, L'arc-en-ciel et les peintres; *S. Ginzberg et L. Couturat*, À propos des propositions particulières; *G. Guy-Grand*, Politique extérieure et démocratie.

XXII, 3: *D. Roustan*, La morale de Rauh; *M. Caullery*, La nature des lois biologiques; *E. Bréhier*, Philosophie et mythe; *E. Laskine*, Les transformations du droit au XIX^e^ siècle; *Ch. Dunan*, Le droit de l'électeur.

RIVISTA DI FILOSOFIA, VI, 2: *G. Marchesini*, Le basi incoscienti del dovere; *G. Galli*, L'Essere; *F. Weiss*, Note critiche alla "Filosofia dello spirito" di Benedetto Croce; *L. Limentani*, Il. Vero nella Morale; *F. Albeggiani*, Il Prammatismo di W. James; *M. Billia*, Identità della psicologia e della morale; *A. Pastore*, Sopra la critica filosofica delle Scienze; *A. Gnesotto*, Del giudizio particolare.